This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

NTWAY LIBRARY
1E5C I

BOSTON
MEDICAL LIBRARY
8 THE FENWAY

THE

GLASGOW

17124

MEDICAL JOURNAL.

VOLUME FIRST.

Printed and Published by
WILLIAM MACKENZIE, 48 LONDON STREET, GLASGOW;
5 CLERK STREET, EDINBURGH; AND 22 PATERNOSTER ROW, LONDON.
1854.

Fig 1.

HYPERTROPHY OF MAMMARY GLAND SUBSTANCE

Section to show enlargement of the ducts & increase of their epithelial secretion

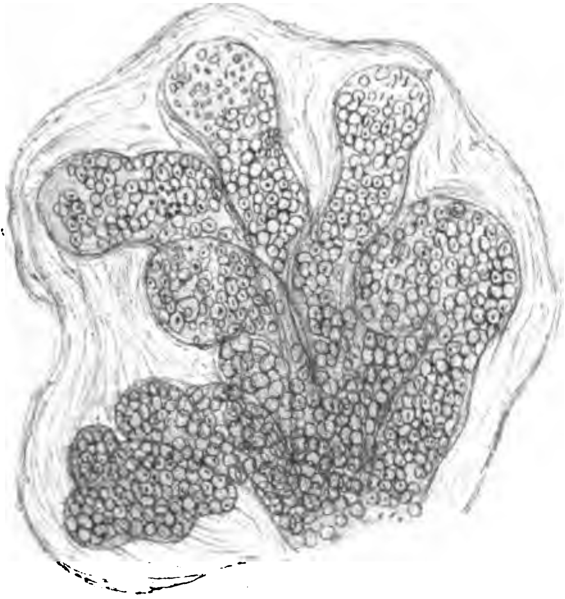
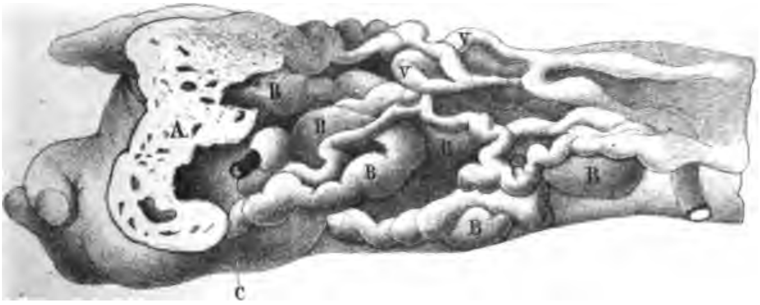


Fig 2.

ANTERIOR VIEW OF HAND DISSECTED

in a case of Cirsoid Aneurism



Maclure & Macdonald Lith.

THE
GLASGOW MEDICAL JOURNAL.

VOL. I.] APRIL, 1853. [No. 1.

ORIGINAL COMMUNICATIONS.

I. *Report of the Glasgow Lying-in Hospital and Dispensary, for the year* 1851–52, *with an Address to the Students attending the Hospital.* By JAMES WILSON, M.D., Senior Medical Superintendent, formerly Lecturer on Midwifery in Portland-Street Medical School, &c. &c.

THE Directors of the Glasgow Lying-in Hospital and Dispensary, in submitting the Eighteenth Annual Report, have the satisfaction of stating that the charity continues to answer in every respect, both medically and financially, the ends for which it was instituted, as the following details will show.

From 15th November, 1851, till 15th November, 1852, 900 women received the benefit of this charity. Of these, 395 were delivered in hospital, and 505 at their own houses. Four deaths occurred at the hospital; at their own houses none reported.

The number of children born in hospital alive was 368. Of these, 210 were boys, and 158 girls. The still-born at full time were 16, viz., 8 boys and 8 girls; and the premature still-born were 7 boys and 7 girls. There were three twin births. The whole of the children therefore born in the hospital amounted to 398.

The number of children born at their mother's houses, and who did well, was 485; of whom 267 were boys, and 218 girls. The still-born at full time amounted to 14, viz., 8 boys and 6 girls. The premature still-born were 6 boys and 4 girls; and there were four twin births. The whole of the children therefore out of hospital was 509, which being added to 398 in hospital, gives a total of 907.

The preternatural and instrumental cases in hospital amounted to 25. The breech presentations at the full time were 7, of which 1 child was dead and 6 alive; and 3 premature, all of which were dead. The footling cases at the full time were 2, both alive, and 2 premature, both dead. There were 2 cases at the full time in which the cord presented, both children being still-born; and 1 where the arm presented, requiring turning, and the child was saved. The forceps were applied in 7 cases, of which 2 children were still-born, and 5 were saved. Craniotomy was performed in one case. The woman died. Thus, of those 25 cases, 14 children were born alive, and 11 still-born.

The preternatural and instrumental cases out of hospital were 21 only. Of these, 3 were breech cases, 1 presentation of the cord, and two of the shoulder, requiring turning,—all the children being saved. There were 5 footling cases, 4 of the children being dead, and 1 living; and one case where the hand and cord presented, and turning was effected, the child being still-born. The forceps were applied nine times, all the children being born alive. Of these 21 cases, therefore, out of hospital, 16 children were saved, and 5 were still-born.

The following particulars connected with these cases are also worthy of record:—

Average duration of labour in hospital—6 hours 45 minutes.
Average duration of labour out of hospital—10 hours 30 min.
Average residence of each patient in hospital—7 days 12 hours.
Average weight of child born in hospital—7 lbs.
Average length of child born in hospital—19¾ inches.
Average expense of each patient in hospital—9s. 7d.
Number of Scotch women delivered in hospital—236.
Number of Irish women delivered in hospital—157.
Number of English women delivered in hospital—2.

Of the women delivered in hospital 4 died. All these cases were in a state of extreme exhaustion when admitted. The first had deformed pelvis, and was delivered by the crotchet; the second had very quick pulse when admitted, but had no obvious disease, and was delivered naturally, the child being alive. In the remaining 2, such was the degree of exhaustion, that delivery could not have been effected without the aid of the forceps, whereby one of the children was saved.

The fact of four deaths having occurred among the women delivered in hospital, and none among those delivered at their own homes, and also a greater number of still-born children occurring in the former than in the latter, may appear to require some explanation. It will naturally be supposed that from the greater degree of comfort, and more attention being paid to patients in hospital, recoveries would be more favourable than in those delivered at their own uncomfortable homes. It can hardly be supposed that the fault lies in the hospital, but solely in the character of those who resort to it, and are confined there. These individuals are a more destitute and wretched class than the others, the greater proportion of them being without homes of any description. Often diseased from exposure, irregular living, starvation, and harsh treatment from their husbands, who have deserted them, they are ill prepared to pass through childbed confinement favourably. Parturition, at all times critical, becomes greatly more so when there is any pre-existing disease, or where it is accompanied by those unfavourable circumstances just mentioned. In those women the labours often became tedious and interrupted from previous exhaustion and consequent mental depression, and they could not be finished without instrumental aid; from which there is good reason to suppose that the fatality has been even less to both mothers and children than it otherwise would have been. The miserable prospects also of those wretched women at the time of delivery, without homes or any prospect of support, and, moreover, the additional burden of a child, must tend very much to prevent complete recovery. All these things considered, it is not surprising that four deaths in 395 cases should have occurred, but rather that so many poor, miserable creatures should have recovered.

About sixty years ago, when the first lying-in hospital was opened in this city, it was interdicted by the magistrates. Such an institution might have been unnecessary then, but now what would have been the fate of those women contained in this Report without such an asylum?

Much as these miserable cases and their effects are to be deplored, it ought to be impressed on the minds of those sufferers, and remembered by them, that the rich and luxurious are not exempt from similar sufferings. For it will be found that the extremes of destitution and luxury are alike unfavourable to child-bearing, and alike liable to the fatal consequences connected with it; and also that the same causes which are so disastrous to the mothers, are equally so to their offspring *in utero* and at birth.

These things considered, it must be gratifying to the subscribers to this Institution to think, that through their liberality so many destitute objects have been relieved at so little expense. The Directors take this opportunity of returning their sincere thanks to the numerous contributors to this very useful charity, and fondly trust for a continuance of their support.

ADDRESS TO THE STUDENTS.

Having given some explanation of the causes of death in the hospital, I feel great difficulty in accounting for the remarkable exemption from death in the out-door cases. Are you quite sure that they are accurately reported? I do not for one moment suppose that any of you have made a false return; and I can testify to your praiseworthy and unwearied attention to your cases during the time of labour, but I fear your minds have not been sufficiently impressed with the great importance of after attendance. Two or three visits after delivery are not sufficient to enable any practitioner to report that the case has terminated favourably. Every experienced practitioner knows that puerperal diseases do not show themselves, in general, till the third or fourth day after delivery. After attendance, therefore, is often the most important part of a medical man's duties in these cases.

Perhaps it may be quite fair to compare the out-door hospital cases with ordinary practice. I shall select a small circle of four practitioners—myself one of the number—who, during the year 1852, have lost one puerperal patient each, not in consequence of any prevailing epidemic, and whose united obstetric cases do not exceed the out-door hospital cases reported.

If there have been no deaths in these out-door cases, and I have seen other reports of a similar kind alike favourable to life, then are we shut up to this conclusion, that our wretched wynds, vennels, and interminable closes—those places of filth and every kind of abomination—which have heretofore been considered the pest spots and sources of disease in our cities, must now be looked upon as the most favourable to health, and that they stand in no need of those sanatory measures which have so engaged the attention of our authorities and other friends of the poor.

But what are we to do with those poor unfortunates, who have not even these insalubrious places of filth and squalor to live in? Are we to shut our hospitals, infirmaries, and fever-houses against them, because deaths occur in these resorts of the destitute? Who does not know that deaths are more frequent in hospitals than in some other places? and who does not know that hospitals are necessary evils, in consequence of the artificial state of our social system, where humane and neighbourly feelings are nearly extinguished, and where no man considers himself his brother's keeper? There may be reasons for shutting up hospitals, but not because deaths occur in them.

Some of the more practical points contained in this Report will now demand a few remarks. Some of you, who have attended the hospital for any length of time, have had an opportunity of witnessing a more than average number of successful forceps cases. The two deaths in hospital, which occurred after the use of the forceps, were in no respect owing to the use of that instrument, but, as stated in the Report, from previous exhaustion, and protracted labour, which could not have been terminated without instrumental aid. From an experience of nearly half a century, the forceps, as an instrument of usefulness and safety, has risen very much in my estimation; but the usefulness and safety of this instrument, as of many others, depend on the hands of those who use them being perfectly trained to their use. Some will tell you that the forceps require no skill, and that any person can use them. Don't you believe this. Such, you may rest assured, never tried them. Others will tell you that their use is most destructive; and so it is in the hands of rashness and ignorance; and those who say so must have formed some prejudice against them, from some unfortunate blunder they have committed in using them; so neither must you believe such persons. Endeavour, while you have an opportunity of having yourselves trained under your different teachers, to secure a knowledge of operative midwifery. In operating on the figure or machine, you may, in this way, acquire a very considerable knowledge and tact in performing many operations. You will soon be engaged in practice, and you may rest assured you will meet with many difficulties in operative midwifery which you little expected. I will venture to say, that there are more failures in the use of the forceps and turning, than in any of the operations of surgery, and just because their importance and difficulty are underrated. Some prefer the perforator and crotchet to the forceps. It is difficult to account for such a preference. The one being an instrument intended to save life, and the other to destroy—at least one life. Sinking all principle, the preference given to the crotchet must be owing to this, that it is much easier to use the perforator than the forceps.

In concluding my remarks respecting the forceps, I beg to state to you the opinion of the late Professor Burns. He says, page 433, 8th edition, of his Principles,—"Many eminent men have placed an undue confidence in the power of nature, and have been hostile to the use of instruments. For a long time I was influenced by the high authority and plausible arguments, as well as bold assertions of these practitioners; but experience has compelled me to adopt the opinion I am now, with a firm and solemn belief of its correctness and importance, to maintain in this chapter. From the strength of the recommendation of the partisans of nature, we should suppose that whenever the child could actually be born without aid, no hazard occurred; and on the other hand, that instruments must of necessity prove, not only very painful in their application, but dangerous in their effects. Now, the first supposition is notoriously wrong, for innumerable instances are met with where the mother does bear her child without artificial aid, and much, doubtless, to the temporary exultation of the practitioner; but, nevertheless, death takes place, or at the best a tedious and bad recovery is the consequence, &c." This opinion is of more importance, because it is the result of experience, overcoming a powerful prejudice formerly entertained by Dr. Burns against the forceps.

The next class of preternatural cases, in point of numbers, is the breech cases, of which there have been 13, all successfully delivered in that way. Some of the cases were very protracted and severe, and I am convinced the labours might have been shortened, and much suffering saved, by bringing down a foot, had the nature of the presentation been known before the breech entered the pelvis. I have seen three cases, of late, in consultation, where the breech was permitted to come down, and where the delivery was effected with great difficulty, and two of the children lost. One of the labours continued for three days. The general opinion is, that to permit the breech to come down is the preferable mode of practice. I have had good reason to think otherwise, and the following case may be mentioned in support of this opinion.

In 1815, I was requested to see Mrs. C——, Partick, who had been in severe labour for 24 hours: the breech was in the pelvis, and had been there for the greater part of that time. The extraction was effected with great difficulty by the fingers in the groin; the child was dead. In the next confinement of the same woman, I was called after she had been 12 hours in severe labour; the breech was, as formerly, in the pelvis, and the delivery was with difficulty finished in the same way as the last, and the child was dead. In her third confinement, I was sent for soon after the commencement of labour; the membranes were not ruptured, the os uteri was opening favourably. I was sure the breech was again presenting, and as soon as the os uteri would permit the introduction of the hand, it was introduced, the feet were brought down, and the delivery easily accomplished in half-an-hour. The child was alive. The two subsequent deliveries were of the same kind, and treated in like manner, with the same happy results. I have no hesitation in saying, that by acting in this way when the breech has not entered the pelvis,—and in general, it can be very easily performed—much suffering might be prevented, and the lives of many children saved.

Dr. Smellie appears to have treated breech cases in this way, and I would strongly advise you to peruse carefully his published cases, from which you will derive much valuable information.

Dilatation of the parts in order that the head of the child may pass more easily, is the principal reason for preferring breech to footling cases; but this advantage is likely to be more than counterbalanced by the uterine exhaustion induced by long protracted and severe labours, which breech cases frequently are. In using the forceps and extracting the child after turning, great assistance is rendered by the regular and unimpaired uterine contraction; on the contrary, when the uterus remains passive, or contracts irregularly, as it is apt to do when exhausted by a severe labour, the extraction is often very difficult, and the child is likely to be lost by unavoidable delay.

The character of the presenting part appears to me a sufficient reason for bringing down a foot. The soft, bulky breech cannot be forced along the varying maternal passages, by the uterine contractions, with the same facility as the smooth, firm head of the child. From the same cause, a softened dead child is not so easily urged through the pelvis and vagina as a firm living child.

However powerfully the uterus may act on the breech of a dead child, it does not tell on the soft head so as to make it clear the passages. A soft body may be easily drawn through a tube, but it will not be so easily propelled; it will be found to bend, double on itself, and at length become impacted like a very soft and flexible catheter when you try to pass it along the urethra; the slightest obstruction will defeat your purpose. While the breech cases in this Report have been all delivered with comparative ease, I must say, that in many of the cases to which I have been called in consultation, the most extreme difficulty has been experienced.

With regard to the management of breech cases, I would advise you to act in this way so soon as you discover the breech to be the presenting part, which you are not likely to do till the labour is somewhat advanced, the os uteri opened, and probably the membranes ruptured. If the presenting part, notwithstanding pretty severe labour, is still at the brim, or but slightly in the pelvis, the labour will be a severe and protracted one, and the sooner you bring down one of the feet the better; in this way you will convert the case into what Dr. Hamilton calls a "half footling and half breech" case, by which you will have very complete command of the child, and may terminate the labour soon, and in the most satisfactory manner. If the breech has descended into the pelvis, and does not advance, which is often the case, you must have recourse to passing the finger over the groin, and exerting what force you can, which is generally very little; or you apply the blunt hook in the same way; you can use much force with it, but you must take care that you do not fracture the thigh, which I have seen done. The fillet is safer than the blunt hook, but it is often impossible to pass it over the groin. This instrument, which is the same as that used for plugging the posterior nares in cases of epistaxis, may enable you to draw the fillet, or a napkin, over the groin, and failing these, I have used the forceps successfully.

Since the opening of this hospital 18 years ago, there have been 7,300 women delivered. In that number the crotchet has been used only twice, once in the hospital, which is stated in the Report, and once at the patient's own house. Both patients died. In my private practice, extending over a period of 48 years, I have had occasion to use the crotchet only once, and that in the early part of my practice. I have, to be sure, used this instrument many times in cases of consultation. So seldom have we occasion in this city and the west of Scotland for the use of the crotchet, that on an average, I do believe, not more than one such case, in general, has occurred in the practice of any individual, during his lifetime. When compared with this, what are we to think of the Dublin, and other Reports? In the Dublin hospital, during the mastership of Dr. Collins, in 16,654 births, the crotchet was used 118 times; while the forceps and lever were used only 27 times. On these statements we make no comment, further than this, that either we have used the crotchet too seldom, or the Dublin practitioners have used it too often. This is not a matter of mere opinion, which may be acted on or not without prejudice to life, but it is a matter of serious and solemn practical importance, involving most important consequences to infantile life. Death of the woman or child after using the forceps is a very rare occurrence here.

In the Report we have three cases of prolapsus of the cord, in two of which the children were lost, and one saved. The usual expedients were tried to keep up the cord above the head. In one case this succeeded, and in two they failed, and these trials were too long continued to render turning of any avail, which is the only expedient I have confidence in for saving the child in these cases.

In the Report there are four cases of turning; one where the arm presented, two where the shoulder presented, and one where the hand and cord presented. In the three first the children were saved, and in the last, from the hand being complicated with the cord, the child was lost.

It is not my intention to give you any detailed account of the mode of turning; that I have no doubt you have got from your respective teachers already. But I beg leave to give you a few remarks on a point respecting which practitioners are not agreed, namely, whether both feet, or only one foot, or the knee of the child, should be brought down in the delivery.

For many years I have contented myself with bringing down one foot. This practice did not arise from reasoning on the subject, and consequently giving a preference to the one over both feet; but it arose from necessity, the not being able to lay hold of both, without the risk of inflicting an injury on both mother and child. From repeated trials, I found that by bringing down one foot the delivery was easily and as safely effected, (if not more so,) than by bringing down both. By subsequent reasoning on the subject, particularly since an excellent paper was published in the *Edinburgh Journal of Medical Science*, in 1845, vol. v., p. 109, by Dr. Simpson, on the preference that ought to be given to the bringing down one foot or the knee, I have now no hesitation in recommending you to follow this plan, rather than wearying yourselves in attempting to lay hold of both feet, which you will find in some cases impossible to do, without inflicting some serious injury on the mother or child, perhaps both. I would strongly advise you to study carefully Dr. Simpson's paper, from which you cannot fail to be convinced of the propriety of following the plan he recommends.

The last subject for my remarks are the nine footling cases in the Report. In three of these cases the children were born alive, and in six they were premature, and the children were born dead. In premature births, unless the labour has been induced by some accident, I believe it will be found that a great proportion of the presentations will be preternatural. In treating footling cases you require to do little more than lead the feet or foot down, so that they may not hitch on any part of the passage. Do not hurry the passing of the breech; give it time to dilate the parts in order to facilitate the passage of the head. Of course, you attend to the body of the child coming in such a way that the face, in passing through the pelvis, may be toward either of the sacro-iliac junctions. From the report of six deaths in nine cases, footling presentations may be considered very unfavourable to life; but you will observe these cases were premature, and Dr. Collins very truly remarks, "That the mortality in footling presentations is comparatively little owing to any difficulty in the actual delivery of the child, but must be referred to causes operating previous to the setting in of labour."

It must have occurred to every experienced practitioner, that there appears to be some intimate connexion between premature labours and preternatural presentations, like cause and effect. What is the cause of these preternatural presentations? By what law is it that the head of the child so uniformly presents with the vertex to the left acetabulum, as to constitute it the natural presentation? Is it owing to the placenta being fixed by a positive law to a certain point of the uterus near the fundus, whereby the fœtus is necessarily suspended, its head, in consequence of its specific gravity, being the most depending part? the insertion of the umbilical cord also favouring this position. The head ultimately reaching and resting on the narrow cervix uteri, whence it cannot be removed without some violent shock. If this is a sufficient reason for natural presentations, may we suppose that by an infraction of that law, which respects the fixture of the placenta, the preternatural presentations are produced? Unless they be produced by the child's own movements, or by some violence the mother may have sustained. If the placenta is fixed at the lower part of the uterus, as in cases of *placenta prævia*, the fœtus cannot be suspended, and consequently may present in any way,. perchance the head or any other part.

But how should these preternatural positions have any effect in inducing premature labour? When the placenta is fixed at or near the lower parts of the uterus it is exposed to various disturbing influences. It may be doubted whether the blood-vessels about the cervix uteri are so well adapted to supply the requirements of gestation, as those about the upper parts or fundus. Look at this injected uterus of a woman who died some days after delivery. How beautifully tortuous are the vessels which go to the upper parts and fundus of the uterus, compared with those short comparatively straight vessels which come direct from the trunk of the uterine arteries, and which go to the under parts of the uterus, where at times the placenta is fixed, and you will perceive one source of disturbance to gestation. In the former vessels the blood will pass to the inner surface of the uterus with perfect tranquillity, while from the latter it will be impinged with a force incompatible with the safety of gestation.

Another source of disturbance in these preternatural presentations will be the parts of the child—say the hand, the elbow, the knees, or the feet, which are in immediate contact with the cervix or os uteri. The frequent movements of these members will produce the same effect of inducing contraction of the uterus, which our manipulations are intended to produce when we wish to procure premature delivery. The pressure of the child too on the placental surface may prove another cause of disturbance sufficient to destroy the child, and thus induce premature delivery. There are many other causes for the occurrence of premature labour, as the death of the child, from disease of itself, or from a morbid state of the placenta; but by the above remarks I have attempted to trace some connexion between premature labour and preternatural presentation.

In conclusion, I may remark that the uterus is an organ capable of accommodating itself to varying circumstances, more perhaps than any other organ of the body; but that power has its limits. Every spot of the uterus where the placenta may attach itself is no more fitted for nourishing and perfecting fœtal life, than every spot of earth is adapted for nourishing and perfecting vegetable life. You may all have seen on some barren upland the seedlings of the forest growing most luxuriantly, and promising at some distant period to become the ornament and pride of the forest, but in a very few years they become stunted, and languish and die. They may stand for a time the melancholy instances of death and desolation, till the winds of heaven, which were wont to fan and foster them, cast them off like untimely births, from that ungenial soil which was unfit to nourish them; a fitting emblem of the fate and frequent termination of fœtal life.

II. *Case of Excision of the Head of the Femur, with Remarks.*

By M. S. Buchanan, M.D., Professor of Anatomy in the Andersonian University, formerly Senior Surgeon in the Royal Infirmary, Glasgow.

Conservative Surgery has so many claims on our attention, that I have often intended to trace an outline of its progress, more particularly as regards the preservation of the upper and lower extremities in those cases of diseased joints in which formerly, amputation was deemed our only resource; or where, if this attempt to preserve life was thought inadmissible, the unfortunate sufferer was consigned to a slow, but sure decay. During my incumbency as Senior Surgeon to our Infirmary, from 1847 till 1851, my attention was in an especial manner directed to this subject, in consequence of the number and variety of those diseases of the joints to which I have above adverted, presenting the most alarming symptoms, and occurring in patients of all ages. In the majority of these cases, the usual routine practice, viz.: bleeding, blistering, and mercury, had been tried prior to their admission into the hospital, but with little relief to the symptoms; the great remedial plan, and, in my opinion, the only one of much use, *complete rest* of the affected joint, having been most lamentably neglected. It matters not by what means this indispensable remedy in such cases is effected; splints, either of wood or of pasteboard, or what I have found preferable to both, gutta percha, must be carefully applied, so as to obtain the desired immobility of the joint.

These remarks are applicable, not only to those cases of synovitis of the knee and elbow joints, where the above treatment by splints is on all hands acknowledged to be useful, but also to those more rare, though no less dangerous, affections of the shoulder and hip joints, where the use of this invaluable apparatus has been so long overlooked. Counter irritation in most of the constitutions which are predisposed to chronic synovitis does much harm; and where there is any tendency to struma, I look upon mercury in the light of a poison. I would not, however, undervalue those powerful remedies, or in all cases of synovitis proscribe their use, but I hesitate not to affirm, that unless conjoined with perfect quietude of the joint, they will be found totally ineffectual.

In consequence of the opinions above advanced, most of the cases of diseased joints, on their admission into my wards, were directed to be placed as for *fracture* of the limb. The apparatus, encircled with gutta-percha, was allowed to remain for a few weeks, when I found the relief obtained so decided, and the progress to convalescence so marked, that I was enabled to dismiss the patients "relieved," with the apparatus re-applied. On their return to the hospital after one, two, or three months, I had the satisfaction of almost invariably finding the swelling of the joint gone, the pain greatly relieved, and that partial anchylosis had taken place, the most desirable termination in all such cases. If, however, suppuration has taken place, accompanied by ulceration of the cartilages or caries of the bones, and the constitutional symptoms have become alarming, then, removal of the diseased parts by surgical means, is our only hope.

Much has been written of late years, and even during last century, in favour of resection of the joints in such cases, and the surgical world has at last come to be nearly unanimous in favour of this plan in respect of the elbow joint. From my own experience in the Infirmary, as well as in private, I have been led to recommend this operation, not only for the elbow joint, but also for the ankle, shoulder, and hip joints. Of excision of the two first, I had several very interesting cases in my wards, which, at some future period I intend to publish; but at present I shall confine myself to the last, and more formidable operation on the hip joint.

Although the head of the femur was successfully removed by Mr. A. White, of Westminster Hospital, in the year 1831, the operation found no advocates, till Mr. Fergusson revived and performed it in several cases with the best results. Within the last five or six years it has been practised by other surgeons, and it may now be ranked among the established operations of surgery. Hitherto it has only been had recourse to in those more advanced cases of morbus coxarius, in which the head of the bone had become dislocated on the dorsum of the ilium. In the following case of excision of the head and neck of the femur, performed by me in the Infirmary with a very successful result, it will be remarked that there is a striking contrast to most of those on record, in the above respect, as well as in the age of the patient, his previous robust health, and the whole history of the case. The reports, which I have curtailed from those entered in the house journals, by my assiduous clerk, Dr. A. Frame, will, I fear, be found rather prolix, but the singularity of the case, and its great importance, will be a sufficient apology.

James Downie, aged 41, Irish, plasterer, was admitted into the Royal Infirmary, 2d November, 1850. Is unmarried, hair of a sandy-red colour, skin fair, eyes light blue, countenance intelligent, height about five feet ten inches, habits temperate. Was in the enjoyment of robust health till about two years ago, when, without any assignable cause, he experienced a gnawing pain in right groin, and observed, at the same time, two or three of the glands in that part enlarged to about the size of an almond. He remained in this state for three or four months, when the pain shifted from the groin to the region of the acetabulum on that side, was of the same gnawing character, more severe during the night, and greatly aggravated by motion, or resting the weight of the body on the affected limb. Soon after, the pain extended down the thigh to the inner part of the knee joint. In September, 1849, he became totally incapacitated for his wonted employment, being unable to walk without the assistance of a stick. From that period, till admission into the surgical wards of the hospital, he had been under the care of several intelligent surgeons, by whose advice he was repeatedly cupped, blistered, and cauterized over the affected hip joint, and had calomel and opium till ptyalism was induced; as also some other medicines, the nature of which cannot be ascertained.

Notwithstanding all this, no relief was obtained; the symptoms rather increased in severity, and on coming under my charge on the 2d of November, 1850, the appearances and symptoms were as follows:—Patient cannot walk without the aid of crutches, and while in the recumbent posture is obliged to lie on his back, being unable to rest on either side. The right leg is semiflexed on the thigh, and does not admit of extension, apparently from contraction of the hamstring muscles, induced in consequence of the limb having been long kept in that position, as the one in which he lay with greatest ease. The knee joint appears to be unaffected. There exists considerable fulness around the right hip joint, over the trochanter major, and down the thigh for about four inches. In this swelling fluctuation is distinctly perceptible. Over the whole gluteal region of the affected side there is felt a constant pain, greatly aggravated by the slightest motion of the limb, or on impinging the head of the bone against the acetabulum. He also complains much of pain in the inner side of knee. Pulse 110, feeble. Tongue dry and foul. Great thirst. Bowels regular.

An incision was made into the lower portion of tumour, through which was evacuated a large quantity of sero-purulent fluid mixed with flakes of coagulated lymph. Head of thigh bone found to be in its normal position. Fomentations were applied. *Full diet. To have six ounces of wine.*

November 26*th.*—Abscess daily discharges a large quantity of pus, now of a healthy appearance. Appetite much improved. Thirst continues. On pressing the head of the bone against the acetabulum crepitation is distinctly perceptible. Continue the wine, and let him have four ounces of whisky daily.

December 12*th.*—To-day while patient was under the influence of chloroform the opening in communication with abscess was enlarged, and a careful examination made with finger and probe, when no opening into the joint could be detected, but pressure over trochanter still elicits a gritty feel, seemingly in seat of acetabulum. Discharge profuse. Has a tendency to diarrhœa. Sleeps little during the night. *Omit whisky. Eight ounces of wine daily. Two grains of opium every night.*

20*th.*—The tendency to diarrhœa, which subsided since last report, has again returned. Has profuse perspiration morning and evening. Pulse more feeble. Appetite completely gone. *Wine increased to twelve ounces daily. Two grains of opium three times a-day. One grain of sulphate of quinine, and ten minims of aromatic sulphuric acid, morning and evening.*

22*d.*—Yesterday vomited wine. Perspiration more profuse. Discharge from hip increased. Diarrhœa also increased. Countenance anxious. Body much emaciated. Pain constant and very intense both in hip and knee joints, especially in latter. Pulse 130, very feeble. *Continue wine and quinine. Two grains of opium every sixth hour.*

A consultation of the medical officers of the hospital was held, and, after careful examination of the case, failing to detect symptoms of other disease, it was recommended that the operation of excision of the head of the femur should be performed, as the only means by which life could be prolonged. The nature and extreme danger of the operation having been explained to the patient, he urgently requested its immediate performance, saying he would take his chance, small as it was, rather than endure any longer the excruciating agony he had been constantly suffering for some months back.

23*d.*—To-day I performed the operation in the following manner:—Patient was first brought under the influence of chloroform at his own urgent request, and having been placed on the table on his left side, an incision to the extent of six inches was made, perpendicularly over the dorsum of the ilium, in continuation with that previously made below trochanter major, through gluteus medius and minimus. A transverse one forming the letter "T" was then made, extending from anterior edge of pyriformis muscle to a line drawn from anterior superior spine of the ilium downwards. On exposing the joint the capsular ligament was found entire, with the exception of a small portion of its inferior border, which was perforated by ulceration. The capsule being incised, the head of the bone was with care disarticulated, and made to project out of the wound by crossing the leg over its fellow. The head of the bone was found completely denuded of cartilage, and, along with the greater part of the neck, in a carious state. The section was made at the root of the great trochanter by means of a common saw, and the diseased bone removed. The apex of trochanter major, being found in a carious condition, was also removed by the cutting pliers. Shaft of femur below trochanter was sound. Acetabulum was completely denuded of cartilage and rough, cotyloid and round ligaments gone, ulceration having extended to the above parts. The edge of the cavity, which was carious, was removed by the forceps. No vessels requiring ligature, the lips of the wound were approximated at once by means of stitches and adhesive plaster, over which was applied the usual dressing supported by a bandage. The operation was completed in a quarter of an hour. About three ounces of blood were lost, and at no time did the pulse flag, although patient was perfectly unconscious during its performance.

9 *o'Clock p.m.*—Has slept a little, and expresses himself as easier than he was prior to the operation. Is lying a little to the left side with right limb still flexed and resting on the other, as the only position he can maintain with any ease. Pulse 120. *Continue medicine formerly prescribed.*

24th.—Has slept at intervals during the night. Profuse perspiration somewhat abated. Takes his wine with more relish. On removing the dressings, flaps appear in close opposition. Little discharge. No swelling of the surrounding parts. Has had one stool this morning. Feels easy.

25th.—Progresses favourably. Slept well last night. Perspiration much diminished. No return of the diarrhœa since the operation. Pulse 100, firmer. Appetite improved.

26th.—Has had little sleep during the night from general restlessness. Little pain in wound, discharge from which is small; edges of incision partly cicatrized. In consequence of position of limb, trochanter major presses upwards and outwards against anterior flap, but no ulceration has yet taken place. Pulse 96, of good strength. Tongue clean. One stool since yesterday. Seems to dislike the wine, of which he has taken none to-day. *Omit the wine. To have six ounces of brandy.*

29th.—The stitches were to-day removed. Wound cicatrizes rapidly. Discharge diminished, and more healthy. Sleeps well. Pulse 84, of good strength. Perspiration greatly diminished. Bowels regular. Tongue clean. Appetite much better. Says he feels no pain in the seat of former disease, and except at time of dressing, or in attempting to move limb, is quite easy. *Omit brandy and quinine. Six ounces of wine daily. Two grains of opium three times a-day.*

31st.—Continues to improve daily. With the exception of a small opening, where perpendicular incision meets transverse, immediately below trochanter major, wound has united, and healed kindly underneath. The posterior edge of trochanter major is slightly projecting through the lower opening already alluded to, and feels rough, but on introducing the probe, the bone is found to be sound underneath. Pulse firmer. *Two grains of opium at bed-time only. Continue wine.*

January 2d, 1851.—Yesterday, towards evening, bowels became relaxed, and during the night he had four loose stools, but by the administration of four grains of powdered opium in a starch injection, the diarrhœa was checked. He had taken during the day a larger quantity of soup than usual. In other respects general health improves. Has taken a beef steak to-day instead of soup, with relish. Projecting portion of trochanter nearly covered with healthy granulations. Probe introduced into opening in wound communicating with acetabulum, discovers surrounding parts in a healthy state, and only about the size of a shilling of inferior edge of cotyloid cavity is felt rough.

11th.—Has continued to improve since last report. Acetabulum covered now with healthy granulations, with the exception of a small portion about half an inch in circumference, which the probe detects rough. Trochanter major also covered completely with healthy granulations, over which cicatrization advances rapidly. Can now turn himself with ease round upon back, from left side, without experiencing the least pain.

21st.—Discharge being so small, wound has been dressed only every second day since last report. Opening in communication with cotyloid cavity, and through which the pus escapes, is now so small as hardly to admit the passage of a quill; and probe introduced into this fails to detect any carious bone, healthy granulations having filled up whole of acetabulum and surrounding parts. Superficial ulceration over seat of incision and trochanter major almost completely cicatrized. General health rapidly improves. Appetite good. On examination of knee joint, flexion and extension can be performed without pain, but on continuing extension, hamstring muscles resist, and prevent the limb from being straightened.

24th.—These last three days appetite has rather failed. Sleep also not so sound. Is troubled with acid eructations, which last symptom was removed yesterday by the administration of one drachm of Gregory's mixture. In every other respect has continued to improve. Ulceration over seat of former incisions completely cicatrized, the opening already mentioned, now about the size of a crow quill, alone existing. From this a small quantity of healthy pus is daily discharged. Motion of femur on os innominatum can be accomplished to a considerable extent without pain. The whole cavity of the acetabulum is found to be filled up with osseous plasma, and healthy granulations. Pressure on dorsum ilii and all around spot where disease existed causes no uneasiness. Patient is averse to any attempt being made to straighten his limb until his strength is further recruited. In consequence of his long confinement to the hospital, the wards of which have been of late much crowded, his general health has suffered slightly. At his own request, accordingly, I procured for him a lodging in the country, to which he was removed to-day by railway, and he stood the journey very well.

After this time I visited him weekly, and found him progressing as favourably as could be desired, acquiring new strength, his appetite good, and in every respect feeling comfortable, and in good health. About two months after leaving for the country, he was seized with an attack of dysentery, having in the interval enjoyed great ease and freedom from pain. This affection acting on a constitution already weakened by protracted suffering, speedily reduced him, and in the course of two or three days he died.

I was unable to be present at the inspection, but the affected parts were transmitted to me for examination. The wound was almost entirely healed up, a small opening admitting a probe alone remaining open. The whole course of the incision underneath was completely consolidated. The cut surfaces of the neck of the femur and great trochanter were quite sound, being coated with a cartilaginous incrustation. The circumference of the acetabulum, from which the edges had been removed, was studded with spicula of new bone, showing the progress which nature had already made towards a cure. The acetabulum was filled up with granulations, but in some points was still rough, the reparative process having not yet extended over the whole seat of disease. At the upper part of the cavity there was a small isolated piece of rough and porous bone, loose, and evidently in the course of being discharged, piece by piece. Around this the bone was rough, but not spongy, while other parts were solid and smooth.

Remarks.—Differing as the above case did from all others in which this operation had been previously performed, it was of course somewhat difficult in execution, and attended with more danger. This proceeded not only from the extent of the incisions required, but also from the liability of the branches of the internal iliac artery, and sacral plexus of nerves to be injured. By proper attention, however, to the relative anatomy of these parts, I can safely affirm, that I never performed a more bloodless operation. After making the transverse section through the gluteus medius, and minimus muscles, and exposing the capsular ligament to the extent of two inches, I passed the bistoury a short distance under the bellies of the psoas and iliacus muscles, and by this means I extended the opening into the joint, so as to allow easily of the disarticulation of the head of the bone, assisted by projecting and inverting the diseased limb over the opposite one. From the extreme debility and exhaustion of the patient, the great danger of the operation proceeded from the risk of hemorrhage during its performance, for I felt convinced, that if any of the large branches of the gluteal or external circumflex arteries had been wounded, death might take place on the table. In consequence of this fear, I made my transverse incision immediately above the insertion of the gluteus medius muscle, and thus avoided injury to any of the above mentioned blood vessels. Another difficulty which I anticipated was the attachments of the round ligament. On opening the capsule, however, I found that the ligament was gone, the ulceration of the acetabulum and head of femur having involved it in their destruction.

From a review of the results of the operation of removing the head of the thigh bone, the above case will be found to differ from all others previously reported, in the following particulars:—

First. The capsular ligament was found entire, with the exception of a small opening at its inferior border, from which the pus made its escape.

Second. The head of the femur was consequently found in its normal position.

Third. Although the acetabulum was diseased, still, only a *part* was removed, and yet a successful result followed.

Fourth. The advanced age of the patient; most of those operated upon by Messrs. Fergusson, Smith, and Notman, having been under twenty, some of them in childhood.

Let us now consider how far the condition of this patient coincided with the rules laid down by surgical authorities on this subject, as justifying operative interference. The information which I have derived is chiefly from the contributions of Messrs. Fergusson, Smith, and Notman, in the *Lancet*, for 1848 and 1849, and from the report of the proceedings of the Medical Society of London, in the *Lancet*, for January, 1851. My patient possessed the first, and most necessary qualification for the success of the operation, namely, a sound constitution originally; or one, at least, apparently free from any organic disease. It has been asserted, that even in such a case as the one narrated, the operation of excision should not be performed, because the patient might recover, were he only let alone. It is my opinion, however, that such an objection cannot, in fairness, be urged against the present case, because surgical aid was not resorted to until all the resources of nature had, after a protracted trial, signally failed, and the patient was reduced to the last stage of debility, emaciation, and hectic fever. I am not aware of any recorded case of this malady, in which recovery took place by natural or medical resources, after the disease had progressed for such a length of time, and was attended with so severe constitutional symptoms, the head of the femur still remaining in its socket. Again, it has been said that death is produced in all such cases, not by the local malady, but by the constitutional affection, and therefore that removal of the local cause of irritation can be of little service. That the constitutional symptoms may arise *solely* from the local disease, the above case affords, in my opinion, abundant proof. Compare the miserable state of the patient previous to the operation, the agonizing pain, the great emaciation and prostration of strength, the profuse perspirations, and other severe constitutional symptoms under which he laboured, with the great ease and comfort he experienced after the removal of the diseased bone. The whole train of hectic symptoms rapidly disappeared, and from the day of the operation to that of his dismissal from the hospital, his progress towards recovery was gradual and well marked.

Disease of the acetabulum has always been regarded as the greatest drawback to this operation. In such cases it has been recommended to remove the diseased bone with the gouge, but I consider such a procedure highly objectionable, for from the thinness of the bone at the bottom of the cavity, perforation into the pelvis would be very liable to occur, and serious symptoms, probably death, would ensue. In this case the greater part of the acetabulum was affected, but I contented myself with removing the edges with the cutting forceps; and although, after the death of the patient, some parts of the cavity were found rough, still the progress towards cure was sufficient to confirm Mr. Walton's opinion, "that there is a reparative power displayed in an unhealthy acetabulum, which is not to be met with in the head of the femur when diseased." It is true we cannot well account for the fact on pathological grounds. The only reason which can be assigned for it is, there being less cancellated structure in the acetabulum; the disease does not advance so rapidly, and its extent being therefore less, the efforts of nature are more successful in establishing a healthy reaction. Besides, it is but natural to suppose that the head of the femur being in a carious state, will act like a *foreign* body, and, by keeping up a constant irritation, prevent the cure from taking place, which nature might otherwise be able to perform. Indeed, in my opinion, it is this reparative power of nature, in filling up the acetabulum, which is the main cause of the displacement of the head of the bone on the dorsum of the ilium, and which accounts for the success which has attended its removal by operation, when situated in this abnormal position. Whether the cavity would ultimately have become altogether sound, had the patient lived longer, it is not possible to determine, but the result was, I think, sufficient to warrant the operation in this case, and to indicate the practice in others of a similar nature, especially in patients a little younger.

It has also been urged that the reparative power of the soft parts is greatly lessened in morbus coxarius, and that the smallest quantity of blood lost must prove highly injurious. Now, in this case, nothing could exceed the rapidity of the cure. Adhesion by the first intention took place over the greater extent of the incisions, and around the remainder healthy granulations springing up immediately, almost the whole wound was cicatrized in the short period of four weeks.

Lastly. Dislocation of the head of the femur has been regarded as another indispensable requisite for the performance of this operation. In the case before us, although the disease had advanced to a great extent, not only was the head of the bone found in its natural position, but the capsular ligament was almost entire; and in such circumstances it is recommended not to operate, because so long as the bone is in its place, say these authorities, there is a chance of anchylosis taking place. But here I would put the question dispassionately; would I have been warranted, under the existing circumstances, to have waited any longer either for anchylosis or dislocation of the bone? I think not, and the result of the operation fully justifies me in my opinion; for on opening the joint not the slightest attempt at anchylosis was perceptible, and from the usual termination of like symptoms we may infer that, before this desirable result or dislocation could have taken place, the patient would have been in his grave.

Such are the principal peculiarities of the case before us, and although we are not justified in drawing conclusions from a single case, still, this instance, in my opinion, should induce us to regard the operation in a more favourable light, and point to its performance as practicable in some cases, where heretofore it has been deemed inadmissible.

Lynedoch Crescent, *February*, 1853.

III. *Clinical Notes.* By J. Adair Lawrie, M.D., Professor of Surgery, University of Glasgow; Surgeon, Glasgow Royal Infirmary.

WITH TWO DRAWINGS.

I. Case of Acute Hypertrophy of both Mammæ in an adult.

Mary D——, aged 30, house servant, (cook, —— Club,) called upon me about the 9th April, 1852, complaining of general pyrexia. At this visit she made no complaint of her mammæ, but when I saw her again, two days afterwards, she said they were painful. I found them very slightly enlarged, painful to the touch, the areola I thought darker, and the papillæ more prominent than natural, the integument otherwise normal. Suspecting sexual uterine excitement, I questioned her very closely. The girl, being from the Highlands, and speaking English imperfectly, did not give very satisfactory or intelligent answers, but the impression left on my mind certainly was, that she might be, and probably was in a very early stage of pregnancy. I accordingly prescribed some gentle diaphoretic medicine, and waited the result. The only cause that she could assign for the enlargement of her breasts, was sudden transitions from heat to cold, the necessary attendant on her employment as a cook.

She did not improve, and as the breasts continued to increase rapidly, I sent her to the Infirmary on the 19th April. She proved a very discontented patient, and twice left the hospital without permission, so that the treatment employed had not very fair play. From whatever cause, none of the means prescribed had the slightest beneficial effect. They consisted, in the early stage, locally of friction, and fomentations, followed by cold and gentle pressure, leeches, and acupuncture; internally, mercury to the extent of gentle salivation, and iodine freely.

On her admission into hospital, 19th April, the breasts are described as enlarged to double their natural size, firm, elastic, resistant to the feel, but very irritating and inconvenient from their weight and size. The integuments not discoloured, and slightly painful. She left the house on the 28th, and returned on May 7th. The mammæ are then reported "to have increased very much in size, to be affected with acute stinging pain, and to have assumed a bluish colour." These symptoms continued to increase, the suffering became very great, and the colour of both breasts was a deep purple before her death. They were never in the slightest degree "pendulous;" on the contrary, although moveable, they were firmly bound to the chest, and from their tension, caused not only pain, but considerable difficulty of breathing. The lobulated form of the glands was very distinctly felt. That their vascularity was great, was shown by the jets of blood which flowed from the puncture of a common-sized grooved needle. In a few minutes I collected 6 or 8 ounces, and to all appearance I could have bled her as freely from this small aperture, as if I had opened a vein in her arm. About the 10th or 12th of May, her general health began to give way rapidly, typhoid symptoms set in, she became partially hemiplegic, and her tongue was much drawn to the left side. She died on the 17th. I showed her twice to my colleagues in consultation; none of them had ever seen a similar case. Surgical interference was considered quite inadmissible, and no means beyond those already employed were suggested. I entrusted the post mortem examination to my friend, Dr. Wm. Aitken, Demonstrator of Anatomy to the University, and Pathologist to the Infirmary, who has most kindly sent me the following Report:—

"A cast having been taken of the external form of the breasts immediately after death, the mammary glands were removed from the body for inspection and preservation. The right gland was larger than the left, but each preserved the characteristic lobulated form and arrangement of the gland substance. Along with the skin and a small portion of pectoral muscle which accompanied each gland, they weighed six pounds fourteen ounces; and it was observed that the skin covering them was less tense than before death, probably from the gravitation of the blood towards the dorsal regions of the body. The right, and larger gland of the two, when freed of all its accessory parts and hardened in spirit, so as to remove a considerable portion of water from its substance, weighed two pounds two ounces.

"The hypertrophy appeared to depend upon the following conditions of the gland substance, and its accessory parts:—1. The acini, Fig. 1st, or sac-like dilatations of the extreme ends of the gland tubes, were distended to about twice their size compared with a mamma which had never secreted milk. This distention appeared to be due, partly to a granular exudation, and partly to a very large amount of epithelial cells, mingled in some places with globules of oil. The ducts of the acini were also in some places irregularly distended with this epithelial secretion. 2. On examining a section of the gland, harder portions could be observed, which, when isolated from the rest of the gland, varied in size from a millet seed to a pea, or a bean; and microscopic observation showed that these harder portions were the seat of an abundant exudation and secretion. 3. Immediately below the skin, a layer of exudation filled up the space between the lobules, making the surface of the gland assume a rounded aspect. This exudation was of a granular appearance, similar to fibrine in its first stage of organization; and it was found abundantly exuded into the interspaces between the tubes and ultimate lobules of the gland, apparently taking the place of the fat usually found there, and which had probably disappeared by absorption, the result of pressure. In each axilla the lymphatic glands were much enlarged, and infiltrated with a granular exudation.

"*Liver.*—Circumscribed deposits were irregularly and sparsely scattered throughout the whole substance of the liver, projecting in some places from its surface. They varied in size from a pea to a plum, presented a granular appearance microscopically, and no liver cells could be distinguished among the substance of these deposits; and while they were perfectly circumscribed by the capsule of Glisson, the secreting substance of the gland was condensed round their periphery.

"*Uterus and ovaries.*—The ovaries and broad ligaments of the uterus were morbidly adherent to the walls of the pelvis, and appeared to be infiltrated with a serous exudation. The ovaries, on removal, (and more especially the right one,) were found to be in a state of inflammatory softening, and much enlarged. The fallopian tubes also, were unequally distended, especially near their fimbriæ, which adhered firmly to the ovaries. The softening was so great, that the substance of the right ovary was easily broken down under the finger, and no appearance of extravasated blood, or of corpora lutea, could be detected in either. The uterus was somewhat larger than one whose cavity had never been distended by conception. Its neck was more especially elongated, and did not terminate in an anterior and posterior lip separated by a transverse slit, as in the normal uterus. A pointed sugar-loaf-like apex projected into the vagina, through which an opening with an irregular border led into the cavity of the uterus; but so contracted that a probe about two lines in diameter, was all that could be passed through it. The whole aspect of this part of the uterus, perfectly resembled what is described as the result of ulceration and cicatrization of the neck and mouth of the uterus. The substance of the organ, more especially near its fundus, enclosed condensed white portions, like the commencement of fibrous tumours in its substance."

Remarks.—1. This case was to me one of very great interest. I had an opportunity of watching it from its commencement to its close, and had the great mortification to see a case, which I at first was inclined to consider "natural," or if disease, trivial, steadily go on from bad to worse, resist every remedy employed, and prove fatal in 38 or 40 days.

2. No one who saw the patient, had ever seen a disease at all

resembling it. I believe that any form of hypertrophy of the mamma is rare, but this peculiar form especially so; indeed I am not aware of any recorded case exactly similar to it. Hypertrophy of the mamma has been divided into the false and the true. In the false, the gland is either not increased in size, or is atrophied, while the reticular adipose and other tissues are inordinately augmented. This form is chronic, and is usually met with in females from forty to sixty years of age. The true has been variously subdivided into—that occurring at puberty; in the adult; the acute; and the chronic. The first is very often vicarious of menstruation. Of its chronic form, examples are given by Sir A. Cooper under the name of "large and pendulous breast," and by Mr. Hey, of Leeds. Of the acute, terminating fatally, an instance is given in the *American Journal of Medical Science* for August, 1834, p. 374. That case resembles the one now detailed in this, that the ovaries were enlarged, and apparently diseased, and that the uterus gave evidence of recent acute inflammation; but it differs from it essentially in this, that the cause of death was superficial sphacelation of the left breast, the result of a recent injury. In the fourth vol. *British and Foreign Medical Review*, is a notice of a paper by Dr. Fingerhuth, of Esch, on hypertrophy of the mammary gland. This paper (I have not seen the original) seems to contain valuable information on the history, symptoms, and pathology of the disease. So far as I can gather, however, it contains no case similar to the present; and although Mr. Birkett, in his Treatise on "Diseases of the Breast," quotes Dr. Fingerhuth's cases as examples of "true hypertrophy in the adult," it is expressly stated in the *Review*, that "the disease always makes its appearance at the period of puberty, and is contemporary with the development of the mammæ; either the patient has never menstruated, or the catemenia are scanty, and soon disappear." All the cases quoted are at or about the age of puberty. Dr. Rasi, an Italian physician, gives a case in which hypertrophy seems to have taken the place of lactation in a woman aged nineteen. The disease was resolved, but recurred in several successive confinements, proving fatal in the sixth, on the 14th day.

On the whole, then, so far as I have been able to discover, the case now detailed is unique in the following respects:—It occurred in a woman aged thirty, without any acknowledged or ascertained cause; it affected both mammæ; it ran a rapidly acute course, resisting all remedies, and terminating fatally in 40 days; and it presented appearances in the ovaries and liver, not hitherto observed in any case of hypertrophy of the mammæ.

3. The morbid appearances, as ascertained after death, are highly interesting, and in some respects peculiar. The dilated acini seem to have contained an unusual excess of epithelial cells, and granular exudation, especially the former. The large

amount of exudation under the skin, and between the tubes and ultimate lobules of the gland, and the absence of fat, appear also to be uncommon; at least, they differ essentially from Dr. Fingerhuth's observations, in which it is stated, "the cellular tissue is loose, the cells larger than natural, and containing a remarkable quantity of fat."

4. The state of the liver and ovaries is certainly not the least interesting point in this remarkable case. Dr. Aitken, in some valuable notes which he kindly sent me, considers the epithelial deposits in the mammary acini as "degenerate;" that they had "a malignant tendency," were absorbed, and caused the deposits in the liver, and the softening of the ovaries. In this view, with all deference, I cannot altogether concur. I see no evidence of malignancy. I am rather disposed to consider them as analogous to, or possibly the second stage towards the formation of, those circumscribed abscesses which are so frequent a cause of death in surgical and obstetrical practice. The present is not a fitting opportunity for entering upon this "*vexata questio*," but I may be allowed to say, that I am one of those who deny that these secondary abscesses are always connected with phlebitis, and uniformly depend on purulent infection. I think I have met with them where there was no wound of the skin. Certainly I have found them connected with wounds of all sizes, and in all states or stages. In the case before us, the substance of the mammæ was penetrated with an exploring needle three times. Were these deposits in the liver, and softening of the ovaries, an instance of that rare form of secondary disease, (or surgical fever, as some style it,) in which there is no lesion of the surface, or were they examples of its common form, and caused by the exploratory punctures? That they were one or other of these appears to me but too probable.

5. The causation of the disease is obscure. The state of the uterus rather confirms my suspicions that sexual excitement was its starting point. But why so rare a consequence from so common an antecedent?

II. *Case of Cirsoid Aneurism.*

In the 31st vol. of the *London Medical Gazette*, I gave an account of the case of Murdoch M'Lellan, whom I treated for this disease, in the Glasgow Infirmary. I propose now to give the sequel of that case, but as few, if any, of those who are likely to peruse these notes, may have read that account, it will be necessary to abridge it here.

Murdoch M'Lellan, aged 21, bleacher,* March, 1841. "All the arteries of the right upper limb, especially the larger arterial trunks, are enlarged. The subclavian, as high as it can be traced, the axillary, and the brachial, are fuller, larger, and of a much more powerful beat than natural, the latter vessel being apparently equal in size to the common iliacs. The pulsation is peculiarly vibratory. The radial artery is greatly increased in size, and tortuous throughout its course. About the middle of the forearm it bulges into a swelling about the size of the point of the thumb, which pulsates more strongly than any other part of the vessel from the subclavian downwards, with a strong whirring vibratory feel, and a loud rasping *soufflet*. Its pulsations are distinctly visible, and resemble the action of a small energetic heart. On the same vessel, half an inch from the wrist, is another swelling as large as a pullet's egg, of an ovoid form, with a somewhat prominent apex. It pulsates throughout, has a loud rasping *soufflet* synchronous with the pulsation of the radial, from which vessel the tumour cannot be separated. It can be partially emptied by firm pressure on the artery above, or on its apex, and when so emptied, its sides have a solid cartilaginous feel, the apex remaining soft. The integument is not discoloured. From this point the radial can be traced in its ordinary course on the back of the thumb, enlarged, tortuous, and presenting characters in other respects similar to those of the brachial. The ulnar artery, in like manner, can be traced in the lower half of the forearm, presenting pathological appearances precisely similar until it arrives opposite the larger tumour on the radial. It then seems to attain a greater degree of dilatation and tortuosity extending across the joint, forming a flattened swelling as thick as the finger, and as large as a half-crown piece, pulsating very violently, and communicating to the ear a loud rasping *soufflet*. The same swelling, more flattened, and pulsating with less violence, extends along the ulnar half of the palm, and seems to terminate in the slough, afterwards to be described; the radial half of the palm, and the backs of the fingers, have the same appearance to the eye as that of the ulnar, but to the touch are devoid of pulsation, with a peculiarly soft semifluctuating feel, as if occupied by a congeries of tortuous dilated veins. The integuments hardly perceptibly discoloured, are of a very slight blue tinge, with the exception of three red vascular spots, apparently superficial nævi; one on the palmar wrist, one on the palm, and one on the second finger.

---

* London Medical Gazette, vol. 31, p. 102.

"Pressure on the radial artery easily commands all pulsation in the course of that vessel, while that in the ulnar continues, and *vice versâ*. Moderate pressure on any part of the artery above the bend of the elbow, commands all pulsation in the forearm. Pressure on the arteries causes acute pain in the fingers and palm of the hand. Remaining portions of palm of hand, and roots of first and second fingers are covered by clotted dressings, on partially removing which a foul sloughy surface is exposed. The third joints of the first and second fingers are bent at a very acute angle, beyond which they cannot be extended. The fingers themselves are soft and puffy, with a feeling of superficial fluctuation, painful but not pulsating. The thumb, ring, and little fingers, nearly normal. The veins of the arm are enlarged, and on admission were reported to pulsate feebly. The limb is smaller than its fellow. Patient says that the pulsating swellings on the hand and forearm are congenital, and that they have not materially increased beyond the proportional growth of the limb. The lower tumour over the radial artery was about the size of a hazel nut, till six years ago, when it suddenly increased in consequence of a blow, and has continued gradually but slowly to enlarge. Since childhood has been liable to suppuration and hæmorrhage from the palm, the latter occurring every third or fourth month, easily checked by pressure. Within the last four years the discharge of pus has been constant, and the loss of blood more frequent and profuse. Five days ago the bleeding became unusually profuse, and before it could be checked by pressure, he lost two pounds of blood; eight hours ago it returned, and he lost about an equal quantity. A tourniquet was then applied, and he was conveyed to the hospital.

"On admission he was faint, and the pulse feeble. After he had rallied, it was 116, soft. Action of heart strong, sounds loud and regular. No *soufflet* can be detected in any other artery of the body, all of which, so far as can be ascertained, seem of a normal size. The tourniquet was taken off, and he was carefully watched.

"*March* 12*th.*—By advice of consultation, brachial artery was tied in lower third of arm. The vessel was exposed by a careful dissection, the ligature passed cautiously round it, and tied in the ordinary way. The artery was as large as the little finger, and its coats very thin. Pulsation in all parts distal to the ligature immediately ceased. Did not lose two drachms of blood, and bore the operation well. Wound dressed on table with strips of adhesive plaster.

"15*th.*—Points of two first fingers and thumb somewhat livid; veins on back of forearm and hand have the appearance of livid streaks, in which the circulation is going on slowly. A large arterial branch is felt beating on back of arm, and reaching nearly as low as the elbow. Action of the heart much excited, with severe palpitations, and slight bellows' murmur, most probably owing to reaction following the loss of blood previous to admission.

"22*d.*—The palpitations ceased, the appearances of gangrene on the fingers and thumb did not extend, and he continued doing well till the 20th, at 4 P.M. when profuse hæmorrhage recurred from situation of former bleedings. Pulsation having returned in the ulnar artery, it was proposed to tie that vessel immediately, but to this the patient would not submit until to-day. The vessel was tied an inch and a-half above the wrist, and was found large, and very tortuous. Did not lose a tea-spoonful of blood. Compress and bandage were continued to palm of hand.

"*May* 18*th*.—Since last report has gone on favourably. The first and second fingers have been removed, and the wound is granulating healthily. The gangrene of the thumb did not extend beyond its point, which has not yet separated. One or two of the articulations of the ring, and of the little fingers, were opened by the separation of the sloughs, the projecting ends of the bones were snipped off with bone forceps, and the parts are now looking well. The apex of the tumour mentioned in last report sloughed, and several large portions of calcareous deposit were discharged from it, confirming the opinion given of it in the original statement of the case.

"General health very good; walks out daily. Dismissed cured.

"*September* 18*th*.—This young man called upon me to-day. Sloughs have separated from fingers and thumb, and the sores have nearly healed. Palm of hand fully more soft and flaccid than when he left the hospital, and pulsating obscurely. No pulsation to be felt in any part of ulnar; radial artery pulsates feebly throughout; smaller swelling on this artery about middle of forearm still exists, but smaller, and pulsating mildly. Brachial at bend of arm is enlarged, but does not beat strongly; it is obliterated for an inch at the point where it was tied; a branch is found to beat in its immediate neighbourhood, and the vessel formerly noticed on the outside of the arm continues still of considerable size. The axillary and subclavian arteries are as large as they were on admission into hospital. The latter of these vessels has an approach to a double sound, heard most distinctly when the patient is in the erect posture; when sitting, the sound has more of the bellows' murmur. The heart, carefully examined, was healthy."

I heard nothing of this patient for eleven years, when on the evening of the 18th March, 1852, he called upon me with his hand and forearm tightly bandaged, and a tourniquet round his arm. He told me that he had continued until very recently in perfect health, and had been able to act as a working engineer on board a steamboat, that that morning blood had flowed in an alarming quantity from his hand, and that recollecting what I had formerly done for him, he had lost no time in leaving Inverary to put himself again under my care. Having examined him, I immediately sent him to the Infirmary. The subjoined reports of his case are extracted from the hospital journals:—

19*th March*, 1852.—States that six months ago the tumour began to re-appear, and has continued gradually to increase, extending diffusedly over the palmar aspect of the hand and forearm. Suppuration took place, and about three weeks ago the integuments in the palm of hand gave way, and bleeding ensued to a trifling extent, which was easily arrested by the patient himself, by means of a bandage. This morning, between 4 and 5 o'clock, profuse hæmorrhage again occurred, but a surgeon being in attendance at the time, it was checked before he sustained much loss; a compress was placed over the bleeding point, a bandage carried up the whole limb, and a tourniquet over the upper part of the brachial ready for tightening, in which state he is found on admission. The limb is perfectly warm, his expression anxious. P. 110, firm; T. clean. Is free from pain.

There is a flattened swelling extending from the palm of hand to the middle of forearm, the integuments having a soft, elastic, fluctuating, and undermined feel, pulsating strongly throughout, synchronous with the heart's action, and communicating to the ear, or fingers, a rasping or blowing sensation. The vessels of the limb generally are very much enlarged and tortuous, the veins having a varicose appearance. The axillary and brachial artéries, along their whole course, have a strong vibrating feel, and are very much larger than natural, the latter being about the size of the little finger. A large arterial branch is felt distinctly pulsating on the back part of the arm nearly as low as the elbow. The tumour at the wrist may be emptied by compression, and pressure over the brachial at the bend of the arm arrests its pulsations.

2 P.M. *20th.*—On removing bandages and compress, blood gushed in large streams from two or three openings in the palm of hand. It was easily commanded by pressure over the part. A consultation was held, and operative interference in the meantime delayed. Compress and bandage applied. Strictly watched.

21st.—Consultation summoned at 1 P.M. when it was agreed to tie the brachial artery at the bend of the arm: this was accordingly done, while the patient was under the influence of chloroform. An incision about two inches in length being made, the artery was carefully exposed and secured by a double ligature, with the effect of arresting pulsation, and diminution of swelling. The parts were found abnormally vascular, but little blood was lost, and patient bore the operation well. The edges of wound were approximated by a couple of stitches, and dressed upon the table with plaster, bandage and compress over the hand and wrist.

27th.—Wound of operation has been dressed every second day, and looks well. No return of hæmorrhage. On undoing the dressings for the second time, and examining the vessels of forearm, the radial artery was felt pulsating distinctly, but no impetus communicated to the swelling, which is very much diminished. Consultation to-day concurred in the propriety of tying the large arterial branch mentioned upon outer aspect of arm. The patient had chloroform at his own request, and this vessel being carefully exposed, the incision through the integument being an inch and a-half long, the ligature was applied in the usual way, about 3 inches above the elbow, and pulsation in the radial was nearly completely overcome. The edges of the wound were approximated with stitches and plaster. Arm and forearm bandaged as formerly. The vessel was found large and tortuous, its coats thin, resembling those of a vein.

2d April.—A small slough having formed upon palm of hand, a red hot wire was being applied for the purpose of destroying the diseased tissue; the patient being very restless, hæmorrhage again took place in a large stream, but was readily commanded as before, with compress and bandage. The radial and ulnar arteries now pulsate distinctly.

3d.—Both ligatures separated to-day; wound almost completely cicatrized. Wound of second operation doing well.

5th.—Ligature of last operation came away in the dressing to-day, both wounds cicatrizing kindly.

11*th*, 4 A.M.—Hæmorrhage having occurred to the extent of five or six ounces, was readily commanded by compress and bandage.

4 P. M.—With the concurrence of consultation, a ligature was placed round the upper part of brachial artery, which was easily exposed by careful dissection. The muscular substance of the hand in the vicinity of the bleeding orifices was next included, and tied by several subcutaneous ligatures, with a view to produce suppuration, and ultimately sloughing of the parts.

14*th.*—Appeared to be going on well till this morning, shortly after 1 o'clock, when there was a recurrence of hæmorrhage, to the extent of 4 ounces, which was easily arrested as before, by compress and bandage.

15*th.*—At visit hour there was a renewal of the hæmorrhage. Consultation recommended amputation, which was accordingly performed to-day, by the circular operation, at the lower part of forearm. Hæmorrhage was commanded by a tourniquet drawn tightly round the arm. About 12 vessels required ligature. Little blood was lost during the operation.

21*st.*—Ligature of brachial separated to-day.

26*th.*—Four ligatures removed to-day.

May 17*th.*—Wound of stump has now nearly healed, that in upper part of arm all but closed. Dismissed by desire.

May 26*th.*—Re-admitted. States that yesterday morning there was a jet of arterial blood from wound in upper part of arm, where the brachial was tied, and which, on last leaving the house, was nearly closed. The hæmorrhage was arrested by placing his thumb upon the bleeding part, till a compress and bandage were applied on the arrival of a surgeon. Edges of wound to be gently touched with caustic.

8*th June.*—Wound now completely cicatrized. Dismissed cured.

My friend Dr. Aitken most kindly undertook to dissect the wrist and hand, and to him I am indebted for the following report and drawing:—

"The drawing, Fig. 2d, represents the appearance of the blood vessels of the amputated hand and arm after dissection.

"Two large sloughs existed in the palm of the hand, having an external opening to each about the size of a shilling, from which the injection freely flowed, when propelled either from the trunk of an artery or a vein. On dissecting the hand, the blood vessels presented a peculiar convoluted appearance, more marked at two situations; namely, in front of the pronator quadratus muscle, immediately above the position of the annular ligament of the wrist, the remains of which existed in the shape of a fibrous cord, and towards the ball of the thumb on the external and lateral aspect of the wrist. The veins were very much enlarged in calibre, and irregularly dilated, communicating by long tortuous vessels round the wrist, with the arterial plexus of vessels, chiefly from the radial and interosseous arteries.

The arterial tubes (*B B*,) presented all the characters peculiar to that condition of the vessels known as cirsoid aneurism; namely, (*a*,) irregular widening of the calibre; (*b*,) tortuosity of route, presenting an appearance, when the binding tissue was separated from them, resembling small coils of intestines attached to a mesentery; (*c*), protuberances and elevations along their course; (*c*,) irregular thickening of the coats at some parts, and thinning at others; (*d*,) the walls of the larger arteries were soft and flabby, and in the fresh condition; the inner, and middle coats, (where they could be seen,) were of a pale colour, and did not exhibit that soft yellow hue, so characteristic of healthy arterial tissue. By a careful comparative examination with the microscope, the more dilated portions presented the following characters:—

"1st, Their walls were so thin that they approached the condition of veins.

"2d, A very small amount of the characteristic yellow elastic tissue could be distinguished, and the elongated pale contractile cells peculiar to the middle coat of the arteries, and to involuntary muscle, could not be seen.

"3d, The thickened portions of the arteries seemed to depend upon an increase in the amount, and subsequent condensation of the binding tissue enveloping their walls, while the thinning of the coats seemed partly to be the result of morbid deficiency of the arterial tissue, and partly of pressure by contiguous distended vessels.

"On making a section through the ball of the thumb, and palm of the hand, (*A*,) the tissue was condensed in its general aspect, but very porous from numerous openings, varying in size from a point visible to the naked eye, to the size of a small bean.

It presented all the characters of very vascular erectile tissue: and all the openings were observed to give out fluid simultaneously with the slightest pressure upon the large vascular swellings situated in front of the arm. The sloughs on the palm of the hand had numerous openings into them, and one very large opening partly filled by coagula, communicated with the large tortuous caverns of the blood vessels in front of the arm. (*C*) Points to a piece of whalebone introduced into that opening."

Remarks.—This is unquestionably a rare disease. So far as I know, few, if any examples of it have been recorded since I gave an account of this case in 1843. I then alluded to cases related by Breschet, Cloquet, and Dupuytren, and to two in the temporal artery, which occurred in the Glasgow Infirmary.* I divided the disease into two forms: 1st, When it occurs uncomplicated; and 2d, In combination with erectile tissue. Of the former, Breschet's, Cloquet's, and the Glasgow cases are examples; to the latter belong Dupuytren's case, and that of M'Lellan.

The pathology, prognosis, and treatment of the two forms are different. The first consists of dilatation, and thinning of the arterial coats, with tortuosity of the vessel at certain points of its course, so great as to form a tumour composed solely of arterial coils. If deeply seated, as in Breschet's cases, it may not be discovered during the patient's life, causing little annoyance, and rarely giving rise to hæmorrhage. Surgical interference is not essential, and when demanded, consists of ligature of the dilated vessel, at the point where the coiled tumour commences. I endeavoured to show that there is no risk in tying the dilated artery, and that ligature of a distant healthy arterial trunk is not justifiable, as, for example, ligature of the carotid, in cirsoid aneurism of the temporal artery.

In the second form we have the same pathological condition of the arterial trunks, with the addition of erectile tissue. The prognosis is more serious, because dangerous hæmorrhage is a common consequence of a wound or ulcer, and because it is much less amenable to treatment. The treatment is more complicated; ligature of the diseased or sound artery is not sufficient, and measures must at the same time be employed for the obliteration or removal of the erectile tissue.

These opinions are fully borne out by the sequel of M'Lellan's case, as now detailed. Ligature of the arterial trunks, in 1842, arrested, but did not cure the disease, and at the end of eleven years, an injury caused ulceration, ending in hæmorrhage to a most dangerous extent.

On his admission into hospital, in March, 1852, I endeavoured to carry these views into practical operation, but unsuccessfully. The cause of failure was probably the great progress which the erectile disease in the hand had made, the large size of the ulcerated openings, and the consequent enormous hæmorrhage.

---

* Glasgow Medical Journal, vol. 1, p. 81.

Be this as it may, all attempts to cure the disease in the hand by cautery and ligature, and to arrest the bleeding by deligation of the arterial trunks, proved abortive. After the hæmorrhage on the 14th March, two modes of procedure were discussed in consultation—ligature of the subclavian, and amputation. Had the hand been less mutilated, the former of these might have been adopted, but I did not think myself justified in incurring so serious a risk, for the doubtful preservation of a comparatively useless limb. One other procedure was not thought of, which on further consideration, I think, ought to have been tried before having recourse to amputation, viz. ligature of the radial and ulnar arteries as near to the wrist as the erectile tissue would have allowed. We overlooked the fact, that in 1842, deligation of the ulnar artery succeeding in arresting the bleeding after that of the brachial had failed. Possibly the same might have happened again; and should a similar case present itself to me, I certainly would tie the arteries leading to the diseased and bleeding tissue, as near to that tissue as possible.

The further experience of this case shows, that arteries affected with cirsoid aneurism, may be tied as safely as a sound vessel, whether the ligature be applied as in the ordinary operation for aneurism, or to the open mouths of vessels after amputation.

The patient continues well, and has returned to his occupation, as steamboat engineer.

(*To be continued.*)

IV. *Case of Cystic Sarcoma of the Mamma, removed by Operation, with Remarks.* By Robert T. Corbett, M.D., Fellow of the Faculty of Physicians and Surgeons, &c. &c.

As the disease of the Female Mamma described in the following case is of very unfrequent occurrence, and as it excited a great deal of interest when communicated to the Medico-Chirurgical Society of this city last year, I feel myself in a manner compelled to record it, as it is only by the collection of such cases that just notions of the nature and treatment of the disease can be known.

The patient was a lady 38 years of age, of spare habit and rather weakly constitution, and the mother of six children.

Two years and five months previous to August 1852, after weaning a child, she was much troubled with milk in her breasts for two days, but could not be relieved of it, being on board of a ship. From that time she began to fall off in her health, and three months afterwards, she accidentally discovered a tumour in her left breast, and became my patient a week after. The tumour was then the size of a hen's egg, hard, the seat of slight pain, increased somewhat on pressure. It was situated at the fore part, but rather to left side, of mamma, and was quite moveable. Supposing from these symptoms that it might be a simple chronic inflammatory or strumous tumour, I ordered cod-liver oil as constitutional, and fomentation as local treatment. She went to the country, and remained eleven weeks, but did not follow my advice. At the request of some practitioner in the locality, the swelling was leeched four times during that period. On her return, tumour had acquired the size of a goose's egg, was still hard, unattached, and the seat occasionally, or after exertion, of slight shooting pain. She had quite recovered her general health.

I now ordered her 3 grains of hydriodate of potass, in a wine glassful of decoction of sarsaparilla, three times daily. At this time Dr. M'Farlane was called in consultation, and he recommended tincture of iodine to be brushed over it every second or third day, and the internal medicine which I had prescribed to be continued. This was done, and persevered in for a month, when there being no improvement in tumour, I recommended equal parts of iodine, and camphorated mercurial ointment, to be used in the way of friction over it, twice daily, and continued the other medicine. This treatment was pursued for fifteen days, when tumour was found in all respects the same as at last examination. I stopped the use of the medicine and ointment, and ordered fomentations, and a tea spoonful of cod-liver oil three times daily; dose to be gradually increased to a table spoonful. This treatment was continued for a month, when report in case book is as follows:—"Tumour now fully the size of a man's fist, hard and lobulated, attached to mammary gland, which moves with it, but it has no adhesion to pectoral muscle. Still only slightly painful. General health good." I was at this time very urgent to remove the tumour by operation, but, contrary to my wish, patient went off on a voyage to Calcutta with her husband, sanctioned, however, she said by a surgeon of high standing, who advised her to give the external use of iodine another trial.

October 25th, 1851.—She has returned from Calcutta, having been ten and a-half months away. Was delivered of a son four weeks before her arrival, and has recovered well; but she is very thin, and suckles child with diseased breast as much as with healthy one. Tumour by the time she left Calcutta, five months after leaving Glasgow, had enlarged to the size of a cocoa nut of nearly full growth, but by the time she reached Glasgow it had attained an immense size, the after progress of the disease having been much quicker than at the commencement. The integuments covering breast were now much inflamed and traversed by many large veins, and she complained of unusual heat and slight pain in swelling, which were removed by cold water dressing. Surface was irregular, skin being elevated in several places into considerable sized swellings, and thinned, where fluctuation could be felt. One prominence especially was larger than the others. Tumour was very moveable and pendulous, requiring to be constantly well supported. The glands in the axilla were not affected. Dr. Lawrie was now consulted, who suggested that a puncture should be made by a valvular opening in the spot where fluctuation was most distinctly felt, as much fluid as possible drawn off, and the aperture then closed up. Should that proceeding relieve the breast much, or reduce its size, he thought she might proceed with the nursing, a duty she was most anxious to discharge. I punctured the tumour next day and drew off an ounce of opaque glairy fluid, which was all I could obtain. The breast was not the least reduced in size. Considering the disease to be *cystic sarcoma*, we recommended the removal of the mass, as soon as she had weaned her child, and had somewhat recruited her system. Patient gave up nursing about the middle of January last, after having suckled her child fully three and a-half months, and her health improved much in consequence; but the tumour continued steadily to enlarge in all directions, except downwards, where skin and cellular substance were quite normal in appearance, and not thinned or raised by projecting points of tumour as in other parts of breast.

June 21*st*, 1852.—Patient's general health is reported pretty good, but she is very emaciated. Menstruation regular. Pulse 76. Tongue clean. Bs. confined. I ordered half an ounce of castor oil, which acted next morning.

June 22*d*, 1852.—The patient having been put under the influence of chloroform, I performed the operation with the assistance of Dr. Andrew Buchanan, and Mr. Parker. Two slightly curved incisions being made through integuments, so as to include only a small section of them with nipple, at right angles to pectoral muscle, tumour was completely removed, and allowing one pound for fluid lost from an incision afterwards made nearly through it, the whole mass and liquid contents must have weighed about eight pounds. The hemorrhage was moderate, four vessels required ligatures, after which the wound was brought together by five stitches, and cold water dressing applied. There was no secondary bleeding. In the evening, warm water dressings were substituted, and continued for seven days. The stitches were not removed till the wound had united, which it did by the first intention, and the patient recovered without any untoward circumstance occurring.

I have in my possession a plaster of Paris cast of the tumour, taken after the operation, which well illustrates its size and configuration; also, a wax model of a small portion of the apex of it, which exhibits the internal structure at that part. These I exhibited to the Society, as also, many sections of the morbid structures, which beautifully illustrated the appearances I attempted to describe. Tumour was examined in a general way immediately after its removal, and although I have said that the preparations of the diseased structures afterwards made, beautifully illustrated my description of them, still, no preparation, however carefully made, could present to the eye the peculiarity and beauty which the fresh section of this tumour presented, to those who were fortunate enough to see it. I have said, an incision made completely through tumour gave exit to a large quantity of fluid, of various colours and consistence. While making the section, we repeatedly came upon considerable collections of milk in the dilated tubes of the gland. The larger part of the tumour consisted of cysts, varying in size from the smallest point visible to the naked eye to that of a large plum, contained in larger cysts, and attached in many instances to their walls by bands passing from their extremities. These contained cysts were gelatinous-looking and transparent, and presented an appearance similar to tapioca thoroughly boiled in water. Many large cavities also existed throughout tumour, containing numerous cysts suspended by pedicles. Towards the centre and lowest part, the mammary structure presented a fibrous texture, arising perhaps from pressure, caused by the diseased mass resting upon it, while in a state of chronic inflammation. I examined carefully about one-third of tumour to ascertain its structure more perfectly, when I found the following morbid appearances:—

1st, Vascular, firm, fibrous tumours about the size of small plums, contained in large cavities, and having cysts growing from their surfaces; and innumerable clusters of the same in the surrounding structure, in many places resembling miniature bunches of grapes.

2d, A very vascular fibrous tumour in a cavity, about the size of a large plum, enclosed in a strong capsule, and having a multitude of various sized cysts growing over its surface. These cysts had a delicate cellular tissue within them in which the fluid was collected, so that when punctured it took some time to ooze out.

3d, Cauliflower excrescences contained in a large cavity, with a few of the milk follicles attached to its walls, dilated and filled with a creamy fluid.

4th, Spongy, vascular, and warty-looking tumours; some of these were very irregular in shape, some were soft, and others were of a fibrous character.

5th, Numerous concrete pearly-looking bodies, varying in size from a small to a large pearl, were also observed.

Towards the lower and internal part of tumour, mammary gland was found free from disease, with the exception of increased solidity of structure. The openings of the milk ducts were patent, and the tubes themselves healthy, with the exceptions mentioned.

Judging from the following facts ascertained from the history of this tumour, and its dissection, viz.:—

1. Its being unattached to the gland at its commencement.
2. That after two years' growth, although it had attained an immense size, and involved the mamma in the disease, the lady continued to nurse her child as much with that breast as with the healthy one, and only gave it up because, to use her own expression, the milk was becoming stiff, or difficult for the child to draw away.
3. That although the whole of the mammary gland participated ultimately, more or less, in the diseased action, still, some portions of it presented the original structure, only more solidified and fibrous; I say, judging from these facts, I entertain no doubt that the disease commenced in the cellular tissue in front of the mammary gland, but beneath its fibrous envelope, and *not* in the ducts of the gland.

The fact I have mentioned, of large collections of milk having been found in the lactiferous tubes, and in the milk follicles, seems to strengthen the opinion, that the mammary gland was the part which became last affected. These collections, in my opinion, can only be accounted for by the effect of pressure of a contiguous growth, seeing that the milk flowed very freely from the breast, even when the disease had advanced considerably, and became latterly less free, only when the disease pressed on with far greater rapidity than it had previously done. Further, the lady discontinued the nursing, not because there was little or no milk, but because it was difficult for the child to draw the milk away. As I have already said, the milk, on bisection of the tumour after its removal, was found collected in large quantities in the lactiferous tubes, and looked so fresh, as to make us suppose that it could not have been long secreted.

In Sir Astley Cooper's work on the Diseases of the Breast, chapter iii. on hydatid disease, I find case 3 resembles the one narrated, in many particulars. In it, the tumour when first observed was hard and moveable, and gradually became larger till it measured two inches in diameter. Mr. Bransby Cooper removed the tumour, and when cut into, a single cyst containing fluid was opened, formed in the cellular membrane of the breast, and surrounded by a solid effusion of fibrine. In all probability, such was the structure of the tumour which I have described, at its commencement, and had the swelling been removed at that time, the mammary gland might have been saved. Case 10 of Sir Astley's work is also of a similar character, but the original situation of the tumour, besides being *sub-areolar*, may be *intra-glandular*, or *sub-glandular*, in which latter circumstances the mammary gland must always be removed with the diseased mass. As Dr. Birket, in his work on Diseases of the Breast, well describes the morbid structures met with in disease depending on cysts, I may be excused quoting it. He says, "The anatomy of the new developments of this class presents an almost inexhaustible variety, at least in appearance. Cysts of every variety of size, blended with fibrous growths varying in the same way, cysts containing fluid only, cysts with fluid and intra-cystic growths, vascular and pendulous, very soft and gelatinous, in other instances of the most fibrous and solid nature, present themselves in different parts of one and the same tumour." And in concluding his remarks, he says, "I may be permitted to state, that I have examined as closely as possible the preparations of these diseases in the museums of the Royal College of Surgeons, of the Hospitals of Guy, St. George, St. Bartholomew, St. Thomas, and the London, and that the details of the morbid anatomy might have been extended, as regards variety, to an almost indefinite extent, but that I feel compelled to notice only the more marked characters of that class."

Not having been at the time sufficiently acquainted with the healthy structures of the mamma, as revealed by the microscope, I submitted a portion of the tumour removed in the above case, for microscopical examination to a gentleman who has had great experience in the use of that instrument, when he gave it as his opinion, that the diseased states had their commencement in the remote secreting gland substance. The members of the Glasgow Medico-Chirurgical Society, however, (with the exception of three) thought that I had taken the proper view of the case, and for the reasons already expressed, I remain confirmed in the same opinion. In conclusion, as I look upon this as a disease which arises from a specific action, but which is not malignant, and does not contaminate the system, I expect the cure to be permanent, as I am satisfied that all the affected structures were removed. The patient at this day, now seven months since the operation, continues quite well.

WEST REGENT-STREET, GLASGOW, *February*, 1853.

V. *Contributions to the Pathology and Treatment of Diseases of the Chest.* By EBEN. WATSON, A.M., M.D., Fellow of the Faculty of Physicians and Surgeons of Glasgow, and Professor of the Institutes of Medicine in Anderson's University.

SPASMODIC ASTHMA.

THERE are few cases more distressing to witness, and I might almost add, without fear of contradiction, that there are none more difficult to treat than those of confirmed spasmodic asthma; and it is with the hope of contributing something, if only a little, to the resources of the healing art in regard of these obstinate cases, that I venture to submit the following observations to my fellow-practitioners. Nor can I better illustrate the importance of this subject, and the call which there is for its renewed and more careful study, than by a reference to the great mortality from that disease occurring annually in our own city.

We find from Dr. Strang's Statistics,* that in the year 1851, 212 persons died of asthma in Glasgow; and in 1852,† rather fewer, viz., 202. Now, by the same tables, we also find that the total deaths from all causes, among persons above 15 years of age, amounted in 1851 to 4543, and in 1852, to 4853; and seeing that asthma very rarely attacks persons below 15 years of age, it follows that these two numbers afford the means of ascertaining the ratio between the general amount of mortality, and that accruing from asthma. Perhaps the facts will be more tangible if expressed as follows:—

Above 15 Years of Age.	**In 1851.**	**In 1852.**
The Deaths from all causes were......	4543	4853
The Deaths from asthma were.........	212	202
The Deaths from all causes except asthma were	4331	4651

Regarding, therefore, the adult population alone, viz. persons above 15 years of age, one death was caused by asthma, in 1851, for not more than 20·4 by all other diseases put together; and in 1852, one death was caused by asthma for 23 by all other diseases. Or, to take another view of it, of all deaths happening to persons above 15 years of age, 4·6 per cent. in 1851, and 4·1 per cent. in 1852, arose from asthma. And it still further appears from Dr. Strang's Report, that there were, by the census of 1851, 241,015 persons living in Glasgow above 15 years of age; so that the proportion of deaths from asthma to those living at the usual age of those liable to that disease, is as 1 to 0·086. If, then, we apply, with the necessary modifications, the formula given by statisticians, viz. that the proportion constantly sick in a population, is double the annual proportion which the deaths bear to the living, we find that there are 414·520 persons constantly labouring under asthma in Glasgow alone: and I believe that this number is rather under than above reality.

The name of spasmodic asthma was originally founded on the mere supposition of a spasm in the air passages, occurring so as to cause the sudden paroxysms of dyspnœa, to which the patient is liable: and now that the structure and functions of the bronchial tubes have been thoroughly investigated and made familiar to every one, we do not *suppose*, but we *know*, that a spasm really occurs in the air tubes and causes the dyspnœa; so that in this instance modern science has confirmed ancient hypothesis. But we need not now speak vaguely of a spasm occurring in the air tubes, for we know that there are only two portions of those tubes where spasm can at all take place in such a way as to cause dyspnœa. These two portions are, in the first place, at the rima glottidis, and in the second, at the extremities of the bronchial tubes, where, instead of cartilaginous rings, there exist muscular fibres, which were first discovered by Reisseissen, and which are generally named after him. In all other parts of the bronchi the rings of cartilage which exist in their outer wall, prevent anything like complete closure, or even any considerable constriction of their calibre.

---

* Report on the Glasgow Mortality Bill for 1851, p. 46.
† Report on the Glasgow Mortality Bill for 1852, p. 28.

Laennec observed that during the asthmatic paroxysm there was great diminution, or even complete absence of the respiratory murmur; a fact which is at once explained by the pathology of the case, for the small tubes being contracted, or rather, obliterated, by the spasm, the air cannot pass into and distend the air vesicles so as to cause the murmur. When the spasm begins to relax, the patient inspires slowly, and with difficulty; a vibratory sound is heard by the bystanders accompanying the inspiration, and much more loudly through a stethoscope placed over the thyroid cartilage. In fact, it is caused by the vibration of the glottis, still partially stretched over the entrance to the windpipe. Now, in my opinion, sufficient importance has not been attached to the spasm of the glottis in asthmatic cases, and to this I wish to direct special attention; for it is the glottidean contraction which chiefly hinders the patient from overcoming that of the much weaker fibres of Reisseissen in the smaller bronchial tubes. As soon as the muscles of the glottis relax, and not till then, does the respiratory murmur become re-established; in other words, it is only then that the patient performs a satisfactory act of respiration.

Observation thus teaches us that the superior constriction, if I may so call it, is the last to give way, and I believe that in early cases of asthma, it is the first to occur. No doubt, when the disease has become fully formed, it is difficult to distinguish between the onset of the spasm in these two places, and I am willing to concede that in such cases it occurs almost simultaneously: but there are two circumstances which prove satisfactorily to my mind, that the affection does commence at the glottis. I allude, in the first place, to the fact that many cases of purely laryngeal disease end in spasmodic asthma; and, in the second, that there are cases, though perhaps not very common ones, in which the affection is confined to the glottis—glottidean asthma, as it might be called.

In my paper on Chronic Laryngitis, published in the *Dublin Quarterly Journal of Medical Science*, in November, 1850, I stated it as my opinion, that inflammation of the larynx, especially if ulcers have formed, constitutes a not infrequent cause of bronchial asthma, and I supported that opinion by the relation of a case which is so much to my present purpose, that I shall be excused for inserting it here :—

Case I.—"In the autumn of 1848, a lady, somewhat above middle age, who had for some years been subject to similar attacks, was suddenly seized with a very severe fit of bronchial asthma, the violence of which was subdued in the ordinary way. When she had recovered I observed that her voice was more than usually weak and husky; but was informed that such had been its character for many years. She herself complained of a constant pain, of a sharp lancinating nature, within the thyroid cartilage. On inquiring into the history of her illness, it was found that the patient in early life had been frequently attacked with acute laryngitis, which had ultimately assumed the chronic form, as indicated by the following symptoms which remained, viz. frequent tickling cough, a weak, husky, and often hoarse voice, and ere long a constant fixed pain in the region of the glottis, combined with an incessant hawking up of muco-purulent matter, sometimes tinged with blood. On carefully examining this lady's chest after the fit had passed away, the loud sonorous râles, and occasional amphoric breathing, characteristic of partial dilatation of the air tubes, were at once detected; the resonance on percussion was deep and full; the breath-sounds in the larynx were harsh and dry."

This case is peculiarly interesting for the sequence of pathological events which it exhibits. We have first acute laryngitis, producing ulceration, and passing into the chronic state. We then have, not only the usual symptoms of the laryngeal disease, which were persistent, but a new affection excited, viz. spasmodic asthma, and that in a most severe degree. The bronchial tubes ultimately became altered by the violence of the morbid agency that had attacked them. It was not to be expected that at this late stage of the disease any treatment could produce a perfect recovery, but it is satisfactory to be able to state, that after the cure of the laryngeal ulcers by the topical application of solution of caustic, the lady had no such severe asthmatic paroxysms, as those from which she formerly suffered.

The occurrence to which I alluded in the second place, viz. of a kind of asthma confined to the glottis alone, will perhaps be sufficiently illustrated by the following case :—

Case II.—A young lady consulted me about two years ago for sudden attacks of breathlessness. She had no cough of any consequence, and in the intervals of the attacks she breathed freely enough, but as she seldom enjoyed a night's rest, her general health was somewhat disordered. Her pulse was quiet and natural, and there was no evidence of heart disease, but her complexion was slightly florid and her lips of rather a bluish tinge. When I saw her there was none of the bronchitis which generally attends asthma, and her age forbade the supposition of its being the ordinary kind of that disease. The respiratory sounds in the larynx indicated, by their loudness and harshness, as well as by the exaggerated length of the inspiratory sound, that this portion of the air tube was in a highly excited state.

She described the fits of dyspnœa as being always worst at night and in the morning. When the disease was mild she could, by keeping very quiet and still during the evening, avoid the breathlessness for the early part of the night, and thus she got sleep for a time, but soon after midnight she was sure to awake with frightful dyspnœa, and was obliged either to rise from bed, or at all events to spend in the sitting posture, the rest of the time usually allotted to sleep. Before she came to me, however, on the occasion to which I am now referring, she was always attacked in a similar violent manner in the evening, so that it was only after being completely worn out that she obtained a short repose, from which she was again roused by extreme breathlessness. As I have said, the heart was unaffected by any disease that I could detect, and the lungs were likewise healthy, at all events in the intervals of the paroxysms; and I believed, from these negative evidences and from the positive signs which could be detected in the larynx, that the chief, nay only, cause of this distressing malady, was spasm of the glottis. I was supported in this diagnosis also by the total absence of any approach to hysteria in this case. I frequently asked my patient and found that she had no feeling of globus, either before or during her attack; and, indeed, her symptoms, as will at once be granted by every candid reader, were essentially different from the chokings of hysterical patients.

No other treatment was used but the regular application of a solution of caustic (℈i. to ℥i.) to the affected part, at first every day and afterwards every second day. About six weeks of this treatment sufficed to remove all the symptoms, and the lady remained quite well until the following winter, when she caught a slight cold and became affected in a similar way, but she applied to me sooner than on the former occasion, and half the time of the same treatment again produced a cure. During the autumn she again had another attack of her disease, but this time it was so slight, and treated so early, that it did not resist the topical application above a week. Since then she has been entirely free of the spasms, notwithstanding the very changeable and trying weather of the past winter.

I think, then, that I am warranted in concluding, 1st, that local causes of irritation in the larynx may produce spasmodic contractions, not only of the glottis, but also of the lesser bronchial tubes; and 2d, that spasmodic affections of the glottis may occur periodically for a length of time, without involving the small bronchial tubes in any great or important contraction. Now, if these conclusions be correct, they in turn prove what was formerly asserted, viz. that asthma is a disease which commences in the upper and not in the lower parts of the air tubes, and it follows, that in the rational treatment of that disease, the remedies, which are most likely to benefit the patient, are such as may be applied to the laryngeal lining and to the glottis itself. But it must be remembered that in a large proportion of these cases, universal bronchitis exists, along with the spasmodic affection of the upper and lower tubes: this may arise either from causes operating simultaneously and capable of exciting both diseases, or the bronchitis may have long existed previously to the occurrence of a true asthmatic paroxysm. The former is then probably the exciting cause of the latter; and I am free to admit the difficulty, nay, perhaps impossibility, of ascertaining with accuracy, in this class of cases, whether the spasmodic affection was first excited in the small tubes, or at the top of the larynx. It is enough for all practical purposes, however, to know that the latter region is always affected in such cases at the same time as the inferior bronchi, and with even greater intensity; and, moreover, that it is the spasm of the glottis which chiefly maintains that of the bronchi, by preventing their expansion by the entrant air during the forcible inspirations of the patient.

Case III.—A lady above middle age had for several years been the subject of chronic bronchitis, when suddenly, and without any very apparent cause, she was seized with marked symptoms of asthma, and after a short, but severe paroxysm, she found her former symptoms importantly changed. The expectoration was diminished, the cough came on in fits of greater length, and the succession of coughs was more rapid, while the accompanying dyspnœa was so severe as to oblige her to maintain the sitting posture day and night. I need not add, that her face had a livid colour and most anxious expression, and that her extremities were apt to become cold. The physical signs corresponded with the general symptoms. The percussion sound was less clear than natural, the respiratory murmur was feeble, and obscured by loud bronchial râles, and during the paroxysms it was entirely absent for a short time. Its return was ushered in by a long stridulous inspiration, and loud sonorous ronchi throughout the chest.

Here then was a case of chronic bronchitis ending in asthma, and there can be no doubt that the glottis was very much affected by the spasmodic contraction. If anything is wanted to prove this, it is to be found in the nature of the treatment which was successfully employed in combating the disease. For, with the exception of a few blisters to counteract the bronchial inflammation, and some anodyne draughts to procure ease and gain time, the only remedial means used were topical applications of solution of caustic to the glottis. In three weeks the patient was free of all asthmatic tendency, the bronchitis remaining little changed from what it had been for years previously; and it is worthy of remark, though I do not wish to build anything upon it, that no return of the asthma has occurred since the one attack just mentioned, which happened fully two years ago.

Such happy results are by no means always to be looked for, and I am far from wishing to laud the topical applications beyond what they deserve. But I am sure every medical practitioner will bear me out in saying, that the ordinary treatment by bleeding, general or local, by emetics, antispasmodics, opiates, and mercurials internally, with blisters, and various other counter-irritants, externally, has seldom been followed by even a partial success in these cases; and I am sanguine enough to hope that I have even already in this short paper adduced sufficient reasons, both theoretical and practical, for the trial of a more rational plan of treatment.

That plan does not involve a total overthrow of former practices. It is not meant, in adopting the new, to set aside as useless all older measures, but only to employ them when really indicated. For instance, it is, I think, established both by clinical observation, and by Dr. Williams' experiments,* that bleeding carried to any length can never diminish the tendency to spasmodic contraction in the air tubes; but during a bad fit of asthma, such a measure may be absolutely necessary to relieve congestions, arising secondarily, either in the brain, or in the lungs themselves. Again, though emetics cannot save the patient from a renewal of the spasm, they may assist in overcoming that which exists, as well as in clearing away the mucus which clogs up the smaller tubes; and antispasmodics may assist in prolonging their good effects for a short time. In some cases where there is much bronchitis, blisters have a good and more lasting effect, but they do not exercise much influence over the spasmodic asthma. In like manner, a slight mercurialization often benefits the bronchitis of the more sthenic variety, as indicated by the expectoration containing plastic matter, mixed with mucous globules, but it can have no effect on the paroxysmal disease. Opium only lulls for a time—an effect by no means to be lightly esteemed—but when the paroxysm becomes severe it utterly fails.

There is here, therefore, an evident blank in therapeutics. There is no agent hitherto proposed which is capable of removing or greatly diminishing the morbid contractility of the air tubes. And I think that a solution of caustic applied to the interior of the larynx supplies this defect—fills up the blank. In proof of its having this exhausting effect on the irritability of the glottis, and ultimately on that of the air tubes, I can only refer to the results of its use in hooping-cough, a disease which is so analogous to spasmodic asthma in its pathology, that it is almost enough to show the efficacy of a remedy in the treatment of one of these diseases, to prove its suitableness for the other. Now, in proof that the topical treatment of hooping-cough is most efficacious and successful, it is enough to state, that, combining the cases treated by me since I first proposed the plan in 1849, with those treated by M. Joubert, of Cherion, and published in the *Bulletin de Therapeutique*, for January, 1852, we have as follows:—

---

* Report read by Dr. C. J. B. Williams at the meeting of the British Association in Glasgow. See his Work on Diseases of the Chest, p. 320.

A speedy cure (in 10 to 14 days,) resulted in......	78	cases.
Shortening of disease, (3 or 4 weeks' duration,)....	39	—
No change was effected in.............................	8	—
Total number treated	125	—

There was not one death among all the cases treated, and taking their per centage, we have—

62·4	were cured within a fortnight.
31·2	were cured in 3 or 4 weeks.
6·4	resisted the treatment.
100·0	

I feel assured that no similar statement could be made regarding the results of any other method of treating hooping-cough.

I cannot, as yet, speak of great numbers of cases of spasmodic asthma treated in this way, but I have been very successful with the topical method in some cases that had previously been treated without much benefit in the ordinary manner. Of these I shall give two examples, and did time and space permit, I could more than double them.

Case IV.—Last summer, Dr. Peter Stewart, of this city, sent me a patient who had come to town to consult him for confirmed bronchial asthma. He had undergone all the ordinary remedies for that disease in the country, including, if I recollect right, a somewhat common, and in my opinion, a barbarous species of counter-irritation when applied to a large surface, viz. croton oil—but all was in vain. His dyspnœa was excessively severe, and occurred frequently during the day, as well as prevented his lying down to rest at night.

I pursued no other treatment but that of a simple tonic to recruit his shattered energies, and the daily application of solution of caustic to the larynx. In about a month's time he was so much better that I advised him to spend a few weeks at the coast, after which he returned home much improved in general health, and comparatively free of the dyspnœa. I recommended him to continue the use of the solution of caustic, applied by himself, as far down his throat as he could reach, and to wear a respirator; and as I have not heard from him since, I believe that these means have been sufficient to keep in check, if not altogether to remove, the remnants of his severe complaint.

Case V.—Another case, at present under my care, and recommended to me by Dr. Smellie, of Buccleuch-Street, is so similar to the above, that I need not give any particular account of it here. Suffice it to mention, that the paroxysms in this case were very severe, and unmitigated by the kind attention and judicious general treatment of Dr. Smellie; but that a few days ago, when the patient last called on me, he expressed himself as feeling better than he had done for the two previous years. This was after the topical measures had been used for only two or three weeks, and I have no doubt that the improvement will be increased and perpetuated by the treatment being employed for a more lengthened period.

It is well known that heart disease is a frequent concomitant of asthma, and in such cases it is often supposed that the former is the cause of the latter disease; but this is by no means the constant relation of the two morbid states, for the disturbance to the pulmonary circulation, occasioned by frequent asthmatic paroxysms, is quite as likely to produce the heart disease as the reverse. It is, however, more important at present to call attention to the fact of the great difference between simple spasmodic asthma, and that which co-exists with heart disease. The pathology of the former has already been explained as an affection wholly confined to the bronchial tubes. But in cardiac asthma, this is, I may venture to say, never the case. In that disease, the substance of the lung is always more or less altered; generally the air cells have become much distended, their walls atrophied, and even in some places ruptured; and it is this vesicular emphysema, not spasmodic contraction of any part of the bronchi, which produces the urgent thirst for air so distressingly experienced by these patients. I need hardly remark, that there could be no good object served by introducing solution of caustic into the larynx in such cases. Indeed, I fear it must be confessed that, in the present state of medicine, little more can be done for such patients than to endeavour as far as possible to palliate their most urgent symptoms, and render more tolerable the short and uncertain period which remains for them to live.

There are, besides the topical application to the larynx, two other remedial measures which I have for some time employed in cases of spasmodic asthma, but regarding which I am not at present able to speak with precision. I may, however, mention them in this place, that others may assist in determining whether or not they have any value in the treatment of that formidable disease. The one is electricity, applied, in a gentle current, as much as possible along the course of the larynx and bronchi. In his experiments on the lower animals, Dr. C. J. B. Williams found that such a current destroyed the contractility of the tubes,* and in several instances I have thought that it co-operated with other means, in diminishing the frequency and severity of the asthmatic paroxysms. This, however, might be the effect, not only of its local, but of its general action as a tonic on the nervous system. The other agent referred to is strychnia, which I have used in repeated small doses of 1-20th, or 1-16th part of a grain, and I believe with good effect in some cases. Dr. Williams found that when the animals he experimented on had been poisoned by this substance, the air tubes did not exhibit contractility, and he thought that they were retained in a tonic spasm by the operation of the poison. This very probably was the case, but of course the use of strychnia in medicinal doses produces totally different effects on the human system, and the benefit accruing therefrom must have another explanation. Now, I believe that this medicine, in such doses as I have mentioned above, will be found a powerful equalizer of nervous action in the body, and therefore a good means of diverting that action, if I may so speak, from concentrating in any particular organ, such as the bronchi, in spasmodic asthma. It is with this view, chiefly, that I look for benefit from the administration of strychnia in these cases, but I prefer stating this as a mere suggestion, and leaving it to future experience to confirm it or set it aside.

---

* See Report formerly referred to.

In conclusion, I shall now recapitulate in brief terms the chief propositions sought to be established in the preceding pages.

1st, That very many cases of bronchial asthma have their origin in laryngeal disease; that some remain for a variable period, as a spasmodic affection of the glottidean muscles, and that in all cases of the disease in question, although the bronchi have long been affected, the chief contraction still occurs in the larynx.

2d, That if this contraction at the glottis be in any way overcome, that of the smaller bronchi either simultaneously or speedily relaxes.

3d, That the usual remedies employed in cases of spasmodic asthma, are either such as are directed against the complications of the disease, and not against its proximate cause, or such as have been found in practice incapable of accomplishing its removal. The latter are therefore useless, and the former unfit to fulfil the indication referred to above.

4th, But this indication may be answered more or less perfectly in different cases, by the application of a solution of caustic of moderate strength (gr. xv., or ℈i. to ℥i.) to the glottis, which is the organ chiefly affected.

5th, Cardiac asthma, as it is called, does not usually depend proximately on simple spasmodic contraction of the bronchial tubes, but rather on vesicular emphysema. Cases of this kind are therefore unfit for topical treatment.

6th, and lastly, Electricity passed in gentle currents, as much as possible along the bronchial tubes, may be found to diminish their contractility; and repeated small doses of strychnia may likewise co-operate with the other means of treatment, probably by withdrawing the nervous energy to other parts, at a distance from the affected air tubes.

VI. *Report of the Trial of James Denny Scott, at the Winter Assizes, at Glasgow on the 4th January*, 1853, *for an alleged Murder committed by him at Greenock on 7th October*, 1852.

THE following Report, slightly abridged, is taken from the *North British Daily Mail* of 5th January, 1853:—

James Deenney or Denny Scott, was placed at the bar on the charge of murder, in so far as on the 7th day of October, 1852, within a house in Cross Shore-Street, Greenock, in occupation of Matthew Scott, shoemaker, he did, with a razor, assault Catherine Scott, his half sister, aged three months, and cut and wound the said infant in the throat and neck, in consequence of which it immediately died.

The prisoner, through his counsel, Mr. A. T. Boyle, pleaded not guilty, and further, that he was of unsound mind at the time of the murder.

Claud Marshall, Sheriff-Substitute for the Lower Ward of Renfrewshire, certified the declaration of the prisoner, and of it having been taken in the usual way. He gave a connected statement as of one being in his ordinary senses when he made the declaration.

The Court—All the senses he had.

Witness—All the senses he had.

Matthew Scott, father of the prisoner, was next examined.—The mother of the prisoner is dead. Had a child by his present wife. Its name was Catherine Scott. The child was three months old when it died. A girl of the name of Jean Denny came about the house at that time. His wife's brother, whose name is M'Donald, also came about the house. Witness's house consisted of a room and kitchen and a small place near the lobby where James slept. Wife, child, and witness slept in the kitchen. Carries on the business of a shoemaker. His son did not work with him, as he never could; he merely passed his time sitting on a stool. Wrought in the kitchen; prisoner also sat there. The cradle of the child was in the kitchen. On the 7th of October the child was in the kitchen, and witness went out between 10 and 11 o'clock, leaving prisoner there. Came back about 11 o'clock. Left his wife and Jean Denny also in the house. Was about five or seven minutes absent. Went out again, and returned between one and two. Was in the house of Mrs. Park on the flat above, when he heard a loud scream from Jean Denny, and the words, "Oh Flora, Flora, the child's murdered; its head's below the cradle." His wife was along with him in the house of Mrs. Park. His wife ran down stairs first, and he followed. When he got down he met his wife in a state of great excitement running into the street. The first thing he saw was a stream of blood on the floor like a cart wheel, then the head of the infant below the table, with its face looking out, and the body in the cradle. Prisoner was away. He had been working with a slipper, which was found on a rack where he was accustomed to lay his job down. Identified a razor which was in the house.

By Mr. Boyle—Prisoner was 24 years of age last August. Has had a great deal of trouble and anxiety about him. Had noticed something wrong with him from his infancy. Prisoner was very bold, and did not care though he should be killed; and that has been his character ever since. Since 1846 all the work he did would not amount to 15d. a-week. Prisoner was of very violent passions when deranged, which occurred at intervals of about ten months. Has known him to commit acts of violence when in that state. On a Sunday in 1843, on prisoner coming in from the Sabbath school, he struck, without provocation, his brother, who was about eight or nine years of age, and witness rising to chastise him, he seized a cruise of oil and threw it into the fire, by which the chimney was set on flames. In the same year the prisoner's sister, who was two years younger than himself, attempted to kick him, and having a knife in his hand at the time, he presented it at her foot, and the point entered about an inch, by which the girl lost the use of her foot, and was obliged to use crutches for a time. Witness gave several instances of the destructive propensities of the prisoner, such as smashing the windows, taking covers off books, &c. Prisoner was at one time taken to the police office on the charge of striking witness, but was dismissed on the opinion of Dr. Auld that he was subject to occasional fits of insanity. In February, 1851, he was again taken to the police office, for setting fire to the house and burning Jean Denny. There was a quantity of naphtha in the house, which prisoner set fire to, first taking away a quantity of provisions from a cupboard: prisoner got forty days' imprisonment at that time. Mr. Gray, the Town Clerk, asked witness if he could maintain his son in an asylum, and he expressed his surprise that such a question should be put, as it was the duty of the authorities to support a prisoner. Prisoner was confined for forty days in May, 1852. He wrote on doors that he did not burn Jean Denny, and that he did not murder Jean Denny. Prisoner also said that he heard persons speaking outside, and that they threatened to come and hang him as was done to Porteous in Edinburgh, of whose execution he had read. He kept a knife in his bed to protect himself, till it was taken from him by Dr. Auld. Prisoner was afraid to lie in bed, and frequently walked out for several hours during the night. All summer, up to the 7th of October, he was always talking of his desire of being hangman for Scotland. Witness has seen prisoner frequently flourish a knife, and threaten, if he had the power, to destroy the whole human race. For the last two-and-a-half years prisoner was not allowed to sleep in the house, but in a small place in the lobby. They were afraid of his committing something fearful; they could not tell what. Heard prisoner say a thousand times, that if he had his mother he would put a knife through her for being daft, which she was. Often thought of putting him into an asylum, but was prevented by the expense. Some two or three days before the child's death, prisoner had all the appearance of a cat or dog in a wild state.

By Public Prosecutor—Prisoner was bold, reckless, and wild when about four years of age, in 1832. He learned to read and write well, but could not enter into arithmetic. Did not care for reading the Bible or newspapers. He had been placed as an errand boy, but he would not stop at employment. He smashed the kitchen window, which contained twelve panes, that they might be replaced by four panes, to be like other people.

By the Court—About six or seven years ago, he spoke privately to the Fiscal regarding the prisoner, and Mr. Williamson said that he could not interfere till he had either hurt or annoyed witness.

Jean Denny was next examined. Knows the prisoner. Was in his father's house in Cross Shore-Street on the 7th of October. Mr. and Mrs. Scott had gone up stairs, and she was in the house, and prisoner, who was mending a shoe. She went out about a quarter before two o'clock. Prisoner had asked her to go out for a scone. Went to a baker's near hand, and was absent about two minutes. Met prisoner, who was running out of the close-mouth. He said he was going down the quay. His apron was folded over, with his hands on it. Witness went straight into the house, and saw the body of the child in the cradle and the head below it. Shouted "Flora, Flora, come down, the child is killed." Prisoner, who was a great eater, complained at times of not getting enough to eat. His stepmother and he were on good terms, and witness never heard him express any threats. Heard him at one time say that he would do for her if he could. Knew nothing about his religious belief—he never went to church. At times he had a very bad temper. He did something to herself at one time; he set fire to the bed in which she was sleeping. He poured some naphtha which was in the house on the bed and set it on fire, for which he was tried and sent to prison.

John Martin, resides in Greenock, and his shop is near the house of Scott. Heard loud cries on the 7th October last, from a girl. Went to the house of Scott and saw the head of a child lying below a cradle; its body was in the cradle. Went for the police, and a search was made for sharp instruments, and a razor was found in the cradle. Prisoner was always considered to be of a deranged mind.

Alexander Mann, Superintendent of Police, Greenock, from information he received, went to the house of Scott on the 7th of October. Found a razor concealed in the cradle in the body clothes of the child. Heard that prisoner was seen on the Innerkip Road, and took a cab to pursue him. Having proceeded a short distance, saw him coming back in the custody of an officer named Wylie. On the way back to Greenock witness asked if prisoner had cut off the child's head with a razor, but he at first gave no direct answer. He then acknowledged that he had done it, and that he was sorry, but that he could not help it. Could give no reason why he had done it otherwise than that bad thoughts had come into his head about death. Was of opinion that the replies of witness were pertinent to the question. Believed him to be weak-minded, but that he knew right from wrong.

By Counsel for Prisoner—Could not say how prisoner was treated at home.

By the Court—Prisoner was well known in Greenock.

The Judge here stated that the authorities were very blameable in this case for prisoner not being looked after, when he had given such evidences of a deranged mind.

John Wylie, a sheriff-officer in Greenock, gave evidence as to his going in pursuit of prisoner on the Innerkip Road. When locking prisoner up, he said, What do you think will be done with me for this? Do you think they will bring me before the assizes for this? Witness said he did not know.

John Cameron, a boy about 15 years of age, gave evidence that he had some conversation with the prisoner three weeks before the child was born. Prisoner said he would do for it—that he would cut the ——— head off.

By Counsel for the Prisoner—Sometimes the prisoner spoke wisely enough. Heard people describe him as Daft Jamie. Sometimes thought he was daft.

Mrs. Lang examined—Heard prisoner ask if he killed the child would he be hanged for it?

Cross-examined—Always considered him of unsound mind.

Dr. Auld, Greenock, examined prisoner in July, 1845, for three or four days. The question asked of witness was, if prisoner knew right from wrong, and the reply of witness was that he did. In 1851 was called in to attend a girl who had been burned. In the course of his visits had some conversation with prisoner. His impression was that prisoner had set fire to the bed because the girl said he was daft. Received a full account of the burning from Scott, who said that he knew he had done wrong, and that he was afraid of being punished. Knew that he took a great interest in the Greenock election, and was in favour of the Liberal candidate, Mr. Dunlop. The reason given was, that the one was the man of the people, and the other was for the dear loaf. Spoke with him in the police office after the murder, and asked him why he touched the little child, as it was doing him no harm. Prisoner trembled very much, but made no reply; he afterwards said he did not know.

Cross-examined—When he examined the prisoner in 1848 considered the prisoner had a much less share of intellect than ordinary men. Many people of weak mind know right from wrong. Considered at that time that the prisoner was of weak mind. Was made aware last summer that prisoner was in possession of a knife, which alarmed his people, and he (witness) induced him to give it up. It is common for people in an insane state to have homicidal inclinations, and yet know the distinction between right and wrong. Prisoner was voracious and restless, symptoms which accompany insanity. Observed no symptoms of monomania in Scott.

John Love, Governor of Greenock Prison, gave evidence that Scott, when undergoing his punishment, conducted himself peaceably like other prisoners. He seemed to be very much afraid of hanging, and expressed an opinion that he would be burned after death.

Cross-examined—Since the committal of prisoner another prisoner had slept along with him, in case he should attempt to do himself any personal injury. Prisoner expected to be hanged, and said that he was afraid that his heart would be taken out and burned, as he heard the magistrates outside making up a plan to do this. Latterly he did not eat his meals regularly, for he said he had heard a party outside his window say, if he had not done so he would have been saved from punishment.

Donald Brotchie, who acts as Chaplain to the Greenock Prison, visited the prisoner when confined in 1851. Sometimes he seemed to pay attention to what was said to him, and at others instruction was completely lost on him. Prisoner seemed to be aware that he was guilty of an offence, but he did not appear sorry for it. He was unwilling to give a reason for burning the bed, but at last he said that his cousin, the person who was in bed, called him Daft Jamie. Conversed with prisoner about the murder; was aware it was a horrible act. For a time he could give no reason for it, and expected to be severely punished. Prisoner said that when his mother came out of the asylum, where she had been confined eighteen months, she said she was converted, or born again, but he cursed and swore at her, and called her daft, and she said, Oh, Jamie, you'll come to a bad end. Prisoner asked about a passage in Scripture, "If you offend one of these little ones, it were better that you had never been born." Sometimes the prisoner despaired of the pardon of God, and at another time he said he thought God would pardon him, for he had done a greater thing for him, he had given his Son to die for him.

Cross-examined—Did not consider him of sound mind.

By the Public Prosecutor—Prisoner said he was willing to stand a fair trial, but that he was afraid they would come on him and destroy him unawares.

This concluded the examination of witnesses for the prosecution, and the declaration of the prisoner admitting the commission of the murder was then read.

John Cameron, the first witness called by the prisoner's counsel, in exculpation, gave evidence that he knew the family well. Always believed prisoner to be of unsound mind; but thought that he was getting so bad last year that he was afraid that some act of violence would be committed; and witness put his children on their guard against him. After the house was set on fire, witness spoke to some of the authorities of the necessity of putting him in confinement. When witness heard of the murder he expressed that he was in no way surprised, owing to what he had heard.

Dr. Speirs, Surgeon of Greenock Prison, was examined, to prove the unsound intellect of the prisoner.

The jury being addressed by the Advocate-Depute and Mr. Boyle, for the defence, Lord Cockburn summed up, and the jury retired. After being absent for about half an hour, they returned with a verdict unanimously finding the prisoner guilty as libelled, and strongly and unanimously recommending him to mercy, on account of general mental imbecility.

Lord Cockburn addressing the prisoner, said, the jury have convicted you of the crime of murder, but in consequence of your mental imbecility, have strongly recommended you to mercy. The court has no power to deal with the case, it is the Crown; and I have no doubt but the recommendation will have effect. However, I am not sure of this, and in the meantime the sentence of law requires to be pronounced. It has been too common for prisoners who could persuade a jury of their insanity to escape, and I am glad that the jury in this case had the firmness to find a verdict of guilty, with the recommendation which the circumstances warranted. His Lordship then in the usual manner, with the exception of assuming the black cap, sentenced the prisoner to be hanged in Greenock on Tuesday, the 25th January, between the hours of eight and ten o'clock in the morning. His Lordship further said, that, before the court closed, he thought it right to state publicly that this man had been for the whole of his life, and particularly for the last two years, in a state of insanity. One respectable witness had said that he was afraid his place would be set on fire from the conduct of the prisoner. He had assaulted his sister and his father, and committed various acts of violence. Representations had been made to the authorities, but nothing had been done. He did not mean to blame any party, but it was his intention, for his own sake, to submit the whole facts of the case to her Majesty's Advocate.

Further, in connection with this case, the following paragraph appeared in the *Greenock Advertiser* of 25th January, 1853:—

> **The Governor of the Prison here has received from the Crown Office in Edinburgh a communication to the effect that the Home Secretary had intimated her Majesty's conditional pardon to James Denny Scott, now in gaol here under sentence of death for murdering his sister-in-law, the condition being that he be transported for life. The pardon was received on Saturday night, and was communicated to Scott, who heard it with the same apparently callous indifference with which he listened to the respite received a week ago.**

The proceedings in this case are so inconsistent with ordinary usage, so much at variance with the doctrines of legal medicine in regard to insanity and the responsibility of the insane, and so irreconcilable with what we conceive to be the first principles of jurisprudence, that we really should have doubted the accuracy of the above reports, were it not that the facts embodied in them have been but too fully authenticated. We deem it proper, therefore, as we hope it will be acceptable to our readers, to review the whole procedure from beginning to end, in doing which we trust we shall be found wanting neither in respect due to constituted authority, nor in the faithful discharge of the duty which we owe to the profession and the public.

The prominent points of this case, viewed in its medico-legal, juridical, and social relations, may be arranged under the following heads:—Was James Denny Scott sane or insane at the time when he committed the deed for which he was tried? If insane, why was he held to be responsible? If sane, and consequently a fit subject for punishment, what were the extenuating circumstances connected with his alleged crime, that suggested to the Jury a recommendation to mercy, and justified the Crown in commuting the sentence? Before entering, however, upon the examination of these questions, we must be allowed to submit as a postulate, that an insane person cannot be held responsible for any act which plainly results from his mental unsoundness, and that every departure from such a rule ought to be repudiated in law, as most assuredly it is repudiated by justice, humanity, reason, and common sense.

In reference to the first of these questions, the state of the prisoner's mind, there is in the first place the fact, that from his mother this man had inherited a predisposition to insanity, that his father had noticed "something wrong" with him from his infancy, and that his "derangement," according to the same witness, was of a periodical character, occurring at intervals of about ten months. It will be observed, further, from a careful examination of the evidence, that the prisoner exhibited at least three different manifestations of mental unsoundness, his conduct showing that he laboured under an illusion of one of the external senses—the sense of hearing—under an aberration of judgment, and an insanely perverted condition of the moral feelings; in other words, that he was insane in perception, in judgment, and in the moral sentiments. This fact we shall now endeavour to demonstrate; and in the consideration, therefore, of the first of the prominent points of this case, we shall, for the sake of method, look at the prisoner's mental condition, with special reference to the three features that have just been named.

We have said that it appears from the evidence that Scott laboured under an illusion of the sense of hearing. Now, it is well known to every one conversant with the management of the insane, that an illusion of the sense of hearing is a very frequent manifestation or accompaniment of some forms of mental disease; and that this illusion existed in Scott is obvious from his remark, while undergoing his first imprisonment, that "he *heard* persons outside threatening to come and hang him," &c.; and again, while in prison on another occasion, that "he *heard* the magistrates outside making up a plan to take out his heart and burn it."! On this subject we may direct attention, in passing, to the singular but undoubted fact, that the insane, who manifest such illusions, generally refer to more than one person as emitting the sounds which they hear, and seldom attribute them to individuals. Hence the phraseology is "they," "persons," "a party;" not "he," "she," or "a person." The recollection of this circumstance may be of use in the expiscation of cases in which the insanity is doubtful, or where there may be reasons for simulating the malady. An ordinary person is not likely to be aware of the peculiarity referred to, which, it is obvious, must be considered with other evidence, as merely helping to establish the affirmative view of the question alone. Again, that the poor creature Scott laboured under an aberration of the judgment, and was altogether imbecile and disordered in intellect, is abundantly evident from the statements made regarding his conduct from infancy upwards. Could anything be adduced more demonstrative of unsoundness of judgment, than those very delusions to which we have already referred? Who but an insane person could commit such an error in judgment as to believe that in this free country, and in the middle of the nineteenth century, the magistrates of the town in which he resided, whose business it is to protect and not to injure the lieges, were devising a plan to mutilate his person and burn his heart? Corroborative, still further, of an error in judgment, is the evidence of Mr. Love, the Governor of the prison, that Scott refused to take his food regularly, because he had heard a party outside the window say, that if he had given up taking food, he would have been saved from punishment; and to the same effect is the testimony of the Chaplain, that he (Scott) was willing to stand a fair trial, but that he was afraid that "*they*" would come on him and destroy him unawares. We have said, thirdly, that Scott's conduct exhibited an insanely perverted state of the moral powers of the mind; and this part of the subject we shall consider more fully than we have done the others, not only because we believe that the deed which the prisoner committed was a direct emanation from perverted moral feeling, but also because there is perhaps no form of mental unsoundness that has given rise to so much discussion, and regarding which there is so much misconception as about that which has been termed Moral Insanity.* While its existence has been fully recognised, and its peculiarities most accurately recorded by medical psychologists, who have devoted their lives to the cultivation of the science of mind, and the elucidation of mental diseases, it has been sneered at, on the other hand, by some members of our profession, who, without the slightest experience of the disease, and ignoring all enquiry on the subject, have imagined that boldness of assertion might be a convenient substitute for accurate information. By the lawyers, again, this form of mental unsoundness has been literally hooted out of court, where the whole artillery of wit, satire, and ridicule, has been directed with merciless precision against the "mad doctors," for entertaining opinions which were said to be not more opposed to the dictates of reason, than subversive of all morality, and apologetic of all crime. Thus, scarcely a year has elapsed since one of the Judges in the Supreme Civil Court of Scotland, while trying a cause referring to the reduction of a will, made himself and his auditors merry at the expense of medical men of the highest standing, who had given what he supposed to be very absurd opinions on the subject of moral insanity; and for a while the staid solemnities of a court of justice were replaced by "roars of laughter"—see the newspapers of the day—which rewarded the industry, and attested the success, of the exertions of the Bench to enliven the dulness of legal procedure, by successive discharges of jokes and facetiæ, which were scattered with liberal profusion among admiring officials, an astounded audience, and a *captivated* Jury—the last, no doubt, finding some solace for their detention from their respective callings in the rare fun which had been provided in the judicial entertainment.

Now, what would be thought of a society of medical men setting themselves forth to controvert the opinions of the most enlightened jurisconsults of modern times, and arrogating to themselves the right to hold up to ridicule an accepted fact in legal science, which, as medical men, they had of course never studied, and perhaps only heard of from vague report, or incidental conversation? Would not the charges of presumption, sciolism, and so forth, be incessantly, and most justly, preferred, while the newly fledged barrister fresh from college, in compassion for their ignorance, and in proof of his own advanced scholarship, might possibly volunteer, for their benefit, a free translation of *ne sutor*, &c.? Yet this is precisely the counterpart of what our friends of the legal profession are doing, to those medical men who have adopted the opinions of the most eminent medical jurists of all countries; of such men as Pinel, Esquirol, Hoffbauer, Georget, Ray, Conolly, Prichard, &c. most of whom have been physicians to some of the largest lunatic hospitals in Europe and America; and who have, therefore, had the best opportunities of observing the diversified manifestations of mental disease. At the same time, it is but fair to add that some of these authorities appear to us to have been a little too systematising and exclusive in their views in restricting this form of mental unsoundness to an affection of the moral faculties, and our experience would lead us to adopt the opinion of an eminent psychologist, Dr. Forbes Winslow, that this form of madness "is not confined to the affective or motive faculties, and that among those who are the subjects of it, undetected and unrecognised delusions often actually exist, influencing the conduct of the patient." * But surely the limitation of the disease, by the writers named above, to the moral powers of the mind, does not invalidate the fact, that these powers, as well as those of the understanding or intellect, are often insanely disordered and perverted, or, that in many cases such perversion is the most striking and palpable manifestation of the malady.

---

* This form of mental malady was first pointed out, we believe, by Pinel, who styled it "*emportement maniaque sans delire.*" By Prichard it has been called moral insanity, using that expression in a negative sense. This writer meant "to denote by it a disorder which affects only the feelings and affections, or what are termed the moral powers of the mind, in contradistinction to the powers of the understanding or intellect." Whether the disease thus defined be *limited*, as this writer supposes, to those mental faculties which have been termed the active and moral powers of the mind, and does not, sooner or later, or even from the first, involve the powers of the understanding also, may fairly admit of a difference of opinion; but that the former are often morbidly affected—with or without a disordered state of the latter is not the question—cannot be doubted by any one who has paid attention to the varied aspects of mental disease. This point will be again alluded to in a subsequent part of this article.

It is time, however, that we should return more particularly to the miserable creature whose case has suggested this article; and therefore we shall now endeavour to substantiate our third statement, that *his* moral faculties were unsound, as well as the powers of his understanding. And this we conceive to be the most demonstrable part of the case. On this point there is the testimony of the father as to various acts of recklessness and violence, even from infancy, such as his threatening "a thousand times" that he would "put a knife through" his mother, his stabbing his sister, striking his father, smashing windows, setting fire to the house, burning Jean Denny, &c.; and what is still more illustrative of the general bias of the mind, and bears more directly on the act for which he was tried, there is the important fact also spoken to by the father, "*that all summer, up to the 7th*

---

* **Lettsomian Lectures in Lancet of 22d January, 1853, p. 77.**

October, he (the prisoner) was always talking of his desire of being hangman for Scotland, and that he had been seen frequently to flourish a knife, and to threaten, that if he had the power, he would destroy the whole human race."! And then, in perfect consistency with this homicidal propensity, under the influence of this insane, irresistible, uncontrollable impulse, he decapitates his half sister, a child three months old, against whom of course he could entertain no malice, and to the destruction of whom he could have been impelled by no motive, excepting the gratification of an insane, ungovernable appetite. Can there be any reasonable doubt that in this case the morbid propensity was the cause of the insane act, in the execution of which the man was not a voluntary, and, therefore, not a responsible agent? Had he committed theft, housebreaking, or been passing base coin, there might have been some reason in considering him responsible for acts like these, which are clearly not traceable to a homicidal propensity; but *because* his deed was homicide—we do not call it murder—we submit that the act performed, and the insane peculiarities of the actor, are to be viewed in the relation of cause and effect. But then, it will be said, that he knew the difference between right and wrong, and, therefore, that he ought to be regarded as a responsible agent; and it was the conviction, we doubt not, that this is the law in such cases, that regulated the whole of the subsequent proceedings. Whether, however, this really be the law, we shall see by and by; meanwhile we shall only remark, that if it be law to consider a person responsible for his acts, *merely because he knows the distinction between right and wrong*, then the sooner the law is made to conform to reason, medical experience, and common sense, the better. For we hold that there is not a more glaring fallacy than to consider a person amenable for acts regarding which he could have exercised no judgment, and to the performance of which he was hurried by a blind, resistless impulse, on the sole ground, that in the mind of the miserable agent the distinction between right and wrong was not completely extinguished. At the trial of Scott, Dr. Auld, the intelligent surgeon of the Greenock police, stated most correctly, "that it is common for people in an insane state to have homicidal inclinations, and yet to know the distinction between right and wrong;" but we would place this truth on a broader basis, and would affirm, without the fear of contradiction, that there is not an inmate of a lunatic asylum—excepting such, in whom, from congenital or inherent causes, the mental faculties are utterly annihilated—who cannot establish such a degree of causation that he can distinguish between these two principles. Many of the inferior animals, guided by instinct alone, can do so; and dare we deny to man—disordered, it may be, in reason, yet not wholly bereft of it—that which we unhesitatingly ascribe to irrational brutes? "Insanity," says the great Lord Erskine, "consists not so much in defect of reasoning, as in delusive sources of thought;" and to break up and destroy these delusive sources of thought is the great object which rational medicine strives to accomplish. And what are the means employed for that purpose, what the principle on which the treatment of lunatics is founded in our hospitals for the insane? Is it to regard them as mere locomotive vegetables, helpless naturals, who are beyond the reach of all moral appliances? Certainly not. On the contrary, is it not on the principle that the unfortunate inmates are amenable, to some extent, to moral discipline, and cognisant, to some extent, of the obligations of moral duty? So that, except in the case of congenital idiots, or of those whose minds have become utterly prostrated, it will be difficult, as we have already said, to meet, even in an asylum, with a lunatic who recognises not the broad outlines which distinguish right from wrong conduct, much less with one who does not know that *murder*, *in the abstract*, is a heinous crime, and severely punishable.

But we are not sure that it is really in accordance with law to hold a person responsible for his acts, merely because he can distinguish between right and wrong. On this point, however, we would express ourselves with becoming deference, lest we should lay ourselves open to the very charge which we have already preferred against our brethren of the long robe. Yet if we do not egregiously mistake, it *has* been held to be law, that the existence of a delusion, *the violent act being the immediate and direct result of the morbid idea*, is sufficient to exempt the actor from legal responsibility. Thus, one of the best institutional writers on the Criminal Law of Scotland, Sir Archibald Alison, expresses himself as follows:—"To amount to a complete bar to punishment, the insanity, either at the time of committing the crime, or of the trial, must have been of such a nature as entirely deprived him (the panel) of the use of reason, *as applied to the act in question*." . . . . "By complete alienation of reason it is not to be understood either that the panel was altogether furious, or did not understand the distinction of right or wrong." . . . . "It is very seldom that a mad person is either deprived of the power of knowing what he is doing, or of reasoning (?) and conversing on its different subjects, or of understanding the distinction between right and wrong in the *general* case, &c."* Now, we submit that the case of Scott comes within the sphere of these legal dicta, particularly of the first, and we think it will be difficult for any one to maintain, that at the time when Scott committed the act for which he was tried, he did not labour under such an alienation of reason, as rendered him incapable of judging either about the propriety of his conduct or about its consequences. Lest any of our readers, however, should still entertain doubts on the subject, we shall put his scepticism to the blush, as well as conclude this part of our analysis, by adducing the testimony of one pre-eminently qualified to form an opinion—the learned Judge who presided at the trial. It will be observed from the newspaper report, that during the proceedings, after the Superintendent of the Greenock Police had given evidence, Lord Cockburn stated, "that the authorities (in Greenock) were very blameable in this case for the prisoner not having been looked after, *when he had given such evidence of a deranged mind;*" and, at the conclusion of the trial, his Lordship further said, "that before the Court closed, he thought it right to state publicly, *that this man had been for the whole of his life, and particularly for the last two years, in a state of insanity.*" Of course it was natural to have expected that there would have been a termination of the proceedings, in unison with such a correct estimate of the mental condition of the prisoner, by his having been removed from the bar to some lunatic asylum, there to be kept during her Majesty's pleasure, &c.; but, strange to say, the Jury found the prisoner guilty as libelled; and, stranger still, they were complimented by the Judge on the "firmness" they had shown in finding such a verdict against a person who had been "insane during the whole of his life," while the "too common" practice of allowing such persons "to escape" was first censured by implication, and afterwards, with the view, we presume, of furnishing an illustration of the proper practice—and what in contradistinction to his Lordship we hope we may be allowed to call the *un*common practice—the prisoner was sentenced to be hanged!

---

* Principles of the Criminal Law of Scotland, vol. i. p. 645.

Having thus by such irrefragable testimony substantiated the insanity of the prisoner, the second point that we proposed to consider was, why, if insane, was he held to be responsible, and a fit person to be punished—as the indictments have it—with the pains of law, to deter others from committing the like crime in all time coming? It must be apparent, however, that no light can be thrown upon this point excepting by the Court and the Jury themselves, and that any attempt to divine the motives which determined their conduct, should only involve us in profitless conjecture. It has been well observed by the erudite Lord Coke, "That the execution of an offender is for example: '*ut pœna ad paucos, metus ad omnes perveniat,*' but so it is not when a madman is executed, but should be a miserable spectacle both against law and of extreme inhumanity and cruelty, and can be no example to others."* Now, we will not do Lord Cockburn, for whom we entertain the most unfeigned respect, the gross injustice to believe that he does not hold the very same maxim that is here expressed; much less will we be so rude as to suppose that he has any sympathy with the French advocate, who exclaimed with savage derision, Yes, insanity is a disease, for which the scaffold is the cure! but really we must be permitted to ask the amiable and accomplished Judge if, in his desire to abide by what he conceived to be the strict letter of the law, he did not, to borrow his own memorable parody, perform something very much akin to "straining at the gnat of form, and swallowing the whole camel of injustice."*

---

* Co. 3 Inst. 6.—Blackstone 4 ch. 2.

The last of the salient points in this case, at which we have now arrived, leads us to enquire, If Scott was sane, as the Jury by their verdict established, what were the extenuating circumstances connected with his alleged crime, that led the Jury to recommend him to mercy, and the Crown to give effect to that recommendation by substituting transportation for life, for the extreme penalty of the law? In considering the part of the subject that we have just left, we had to dive into motives; here, we have to search for facts, in explanation of a palpable incongruity. But really we feel it to be as difficult in the one case to adduce facts, as in the other it would have been impossible to have condescended upon motives. If the complete amputation of the head from the trunk, so that the former was found in one part of the room where the deed was done, and the latter in another, be not the most cruel and barbarous of murders, then we should like to know what more concentrated species of butchery would have been required by this "firm" Jury, to have convinced them that the culprit fully merited the ignominious death of the scaffold, and that their interposition in his behalf, if not a snare, should have been at least a mockery and a delusion? And then, to think of the Crown sending this miserable lunatic, or merciless murderer,—we leave the Home Secretary to certify the capacity—to a penal settlement! We trust our readers will not accuse us of perpetrating a bad pun, when we express our conviction that this is the crowning absurdity of the whole transaction. But as this part of the business, being merely an exercise of the Royal prerogative, raises no question of professional interest, we feel that we dare not trespass any longer on the indulgence of our readers. We very strongly suspect, however, that if Mr. James Denny Scott be not subjected to a very vigilant supervision, we shall yet hear of his homicidal propensities, either at Millbank Penitentiary, or in the penal colony to which he may be consigned.

[For the above remarks, on the interesting case of Scott, we are indebted to a medical gentleman, practically versant in the different forms of mental unsoundness.—Ed. G. M. J.]

---

* Speech of Lord Cockburn in the High Court of Justiciary, on 9th June, 1852, in the case of Sarah Henderson or Fraser and James Fraser, as reported in the "Scottish Jurist," vol. 24, p. 498.

VII. *Remarks on the Increase of Small-pox in Glasgow.* By Dr. John Charles Steele, Superintendent, Royal Infirmary, &c. &c.

Among the many important facts elicited by the improved Mortality Bills in connection with the city of Glasgow, there are none more urgently claiming the attention of the authorities, and of all who are interested in the sanatory condition of the city, as illustrative of the dangers with which we are surrounded, than the ascertained results of that series of diseases, which are well known to be within the limits of counteraction, if not of entire prevention. A casual survey of these instructive documents for the last 17 years, (since previous to 1835, no mention is made of the causes of death), affords convincing proof of the extensive ravages to which Glasgow has been subjected by the combined influence of small-pox and typhus fever, in the unmitigated condition of ordinary prevalence, as well as in the occasional exacerbations which they periodically assume. During the past four years the mortality returns from fever exhibit a gratifying diminution, when compared with a like interval for many years preceding, a diminution justly attributable to the improved condition of the working classes, as well as to a decrease in the number of casual poor: since there are few localities in the country, in which the connexion between famine and fever has been more strikingly illustrated, than in this city. Small-pox on the other hand, which is to a great extent independent of those social conditions that operate so severely on an adult population, has observed during the same, and it is feared for a much longer period antecedent, a high and even increased rate of mortality; notwithstanding the protective agencies in daily use for the purpose of prevention, and in spite of the enlarged powers afforded by the legislature to vaccination boards, as well as to the local guardians of the poor, for the universal adoption of these salutary checks on the extension of the malady.

The main purposes of the present paper are to enquire, whether, and to what extent, small-pox has increased of late years in Glasgow, and how far vaccination has been successful in relieving the mass of the population from the disease. And in the course of investigation, there are other matters allied to the questions at issue, which it will be necessary to incorporate with the following remarks, as these occupy an important place in the development of those elements so destructive to the community. While singling out from the Mortality Bill one subdivision in the class of zymotic affections for special comment, it is far from my present purpose to assume, that there are no good grounds for gratulation at the improvement which these documents have exhibited for several years past, in relation to the health and average mortality of our adult population. On the contrary, there is undeniable evidence of this fact given in Dr. Strang's interesting Reports on the Mortality Bills,* coupled with proofs of a similar and gratifying character, as regards the social comfort and commercial prosperity of the people at large. In fact it is fully shown, by comparison with data of an analogous nature, taken from the Reports of the Registrar-General, that, exclusive of the large infantile mortality, there are few cities capable of exhibiting such a marked immunity from the causes which are usually considered so destructive to adult life. These very circumstances, however, afford in themselves negative proofs of the importance of examining minutely into those causes of mortality, that are operating in the midst of increasing prosperity, and which, if allowed to continue in force, are destined to tell with destructive effect on the future history of the city.

In investigating the history of small-pox in Glasgow, it is fortunate that we possess materials for observation extending as far back as 1783. Dr. Robert Watt, to whose exertions this is mainly attributable, prepared a variety of tables from the Parochial Registers of the city, and among other valuable information which he contrived to extract from these documents, there is a statement detailing the number of deaths occurring annually in Glasgow for a period of thirty years subsequent to 1782, as also the annual number of deaths from small-pox during the same period.† These returns afford a very striking exemplification of the annual ravages of small-pox among the young, at a time when the practice of inoculation was generally had recourse to for the purposes of prevention, as well as the beneficial results which subsequently flowed from the adoption of vaccination. During the first decennium of the above period, the mortality which ruled in small-pox, when compared with the total number of deaths under ten years of age, was as high as 34·9, or one in three, while in the last decennium, that is, from 1803 to 1812 inclusive, a period when vaccination was all but universally followed, it is found to have decreased to 9·2. From 1812 to 1835 it is much to be regretted that no record of the deaths from small-pox has been kept for even a limited period. Since the year 1821 annual Bills of Mortality have been issued under the sanction of the Lord Provost and Magistrates; but Dr. Cleland, at whose suggestion these were instituted, and who afterwards superintended their publication, gave no list of the diseases attended with fatal results. We are, therefore, left in conjecture with respect to the estimated prevalence of small-pox previous to 1835, although Dr. Robert Cowan, on whose authority in matters of this kind implicit confidence may be placed, was strongly of opinion that the disease had been considerably on the increase before that period. Dr. Scott Orr has shown in a Table * constructed from the Glasgow Bills of Mortality, from 1836 to 1845 inclusive, that during the latter half of this decade, the mortality from small-pox was undergoing a favourable diminution, and from this circumstance he was led to doubt the supposition of the disease being on the increase. The apparent diminution, however, will be observed by reference to the following table, which I have extended to the close of 1852, to have been only of a temporary character, and it affords another marked instance of the periodic revolutions to which all contagious maladies are subject:—

---

* The praiseworthy efforts recently made by the Lord Provost and Magistrates to conform the Mortality Bills for Glasgow, with the plan adopted by the Registrar-General of England, has been attended with greater success than the most sanguine could have anticipated. It is by no means complimentary to Scotland, that it should now be the only catholic country in Europe, wherein a proper Register of Mortality is awanting. As far as Glasgow is concerned, the local authorities may justly claim the credit of removing the stigma, independent of legislative interference.

† Appendix to Treatise on Hooping-Cough.

Years.	Estimated Population.	Total Deaths from Small-pox.	Years.	Estimated Population.	Total Deaths from Small-pox.
1835	230,860	473	1844	305,534	99
1836	238,950	577	1845	313,334	195
1837	247,040	352	1846	321,134	†
1838	255,390	388	1847	328,934	592
1839	264,010	406	1848	336,734	300
1840	272,900	455	1849	344,534	366
1841	282,134	347	1850	352,336	456
1842	289,934	334	1851	360,138	618
1843	297,735	151	1852	370,000	584

More than half a century has elapsed since the antivariolous efficacy of vaccination was first established in this city; and in the course of the intervening period no exertions have been spared, either on the part of the authorities, or by the united efforts of the Medical Faculty, to impress upon all classes the protective agency afforded by its use. It is therefore somewhat lamentable to reflect, that the first two years in the last half of the nineteenth century should conjointly exhibit a larger mortality from small-pox, than any similar period of which we have a record since the introduction of vaccination; and that they even outnumber in fatality the returns of a like period during the preceding century, when variolous inoculation was the only alternative resorted to as a means of protection. There can be little doubt that the continued prevalence of the malady is mainly attributable to unjustifiable carelessness on the part of the poor, since the recorded mortality has been chiefly confined to the infantile population; but that it has also extended itself, though in a more mitigated form, to those previously vaccinated, and that

---

* Edinburgh Medical and Surgical Journal, No. 171.

† The Returns for 1846 have not been published.

not a few adults have also fallen victims to the disease, we think is also capable of demonstration. The means of ascertaining the relative proportions of vaccinated and unprotected in a given mass of population are necessarily extremely limited. Out of 244 individuals placed in similar circumstances to the poor in Glasgow, Dr. Stark discovered that only 116, or less than the half, were vaccinated, that 104 of the remainder had already taken small-pox, leaving 24 still liable to an attack by being unprotected.* The ascertained results of practice in the Glasgow Royal Infirmary are exceedingly instructive, in as far as they relate to many vexed questions connected with the pathology of small-pox. The returns, however, are only applicable to the disease as it appears in adults, the admissions to hospital being almost entirely restricted to this class. The same rule holds with respect to other epidemics peculiar to children; and consequently diseases of every day occurrence, such as measles, scarlatina, and hooping-cough, barely find a place in the annual register, notwithstanding the important position they occupy in the Mortality Bills of the city. Fever, again, which is peculiarly a disease of adult life, has of late years occupied but a secondary place as respects the comparative mortality over all cases, but in the hospital register it still retains a pre-eminent position over all other diseases. So general has the habit become of sending all affected with fever to the hospital, that during several stated periods for last year, 1852, the fatal cases from this disease occurring in the hospital, corresponded with the Mortality Returns for the whole city and suburbs.

The universality of small-pox enables it to occupy a position intermediate of the above, and from the data furnished by the experience of the hospital, its prevalence among the adult portion of the community is observed to have been considerably on the increase for many years. Previous to 1834 the number of cases admitted was exceedingly limited, seldom reaching above 30 in the course of a year, and there are several years which do not yield a single example of the disease. From 1795 to 1804 inclusive, the numbers admitted amounted to 22, and during ten years subsequent to 1804, they had only reached to 33. From 1815 to 1825, 163 cases are reported as having occurred. Judging from a considerable increase in 1823–24, there appears to have been an epidemic of small-pox at the period, inasmuch as the numbers for each year respectively amount to 46 and 37, and conjointly present a larger number than were admitted during the first twenty-two years of the history of the Institution. From 1825 to 1835 the total cases admitted amounted to 204, the last two years of the decennium furnishing no fewer than 132 of that number. The returns from 1835 to 1852 inclusive will be best understood by referring to the following table, constructed for the purpose of exhibiting at a glance the numbers and mortality of the cases admitted from 1832 till the present time, arranged in septennial periods:—

---

* Edinburgh Medical and Surgical Journal, No. 163.

Years.	Number of Cases.	Number of Deaths.	Years.	Number of Cases.	Number of Deaths.	Years.	Number of Cases.	Number of Deaths.
1832	3	1	1839	59	15	1846	99	10
1833	14	5	1840	61	18	1847	84	21
1834	62	4	1841	26	0	1848	48	13
1835	72	18	1842	38	5	1849	43	12
1836	110	45	1843	13	3	1850	78	18
1837	75	8	1844	10	0	1851	163	30
1838	35	10	1845	22	4	1852	115	19
Mort. per cent. 1st Period, 24·5.			2d Period, 19·2.			3d Period, 19·5.		

The interval between 1835 and 1838 comprises a period when the deaths from epidemic causes in Glasgow appear to have reached their maximum, the rate of mortality exclusive of still-born in 1837 rising as high as 1 in every 24 of the population. This unusual fatality was chiefly accounted for by the ravages of fever, no fewer than 3433 individuals having been cut off by this disease alone, during the triennial period under consideration. The returns for 1836 were greatly augmented by an increase in the prevalence of small-pox, which, as usual, told most severely on the young, the number of deaths under five years amounting to 520, or nearly 92 per cent. of the whole cases. The table shows that out of 110 adults attacked during the same period, 45 of the cases terminated fatally, a very large mortality when compared with other returns, and indicative of an unusually large number of unprotected. The most important features in the table, are the diminished rates of mortality which the two last periods present when compared with the first, and the decided increase in the number of cases which the last septennial season exhibits. How these conflicting circumstances are to be explained becomes a question of vital importance in its bearing on the future history of the disease. There are few who doubt the fact of small-pox having materially increased in frequency in this country during the last twenty years, and the majority of observers have attributed the change to a neglect of vaccination. That this neglect has prevailed, and is still prevailing in Glasgow, especially among the children of the Irish poor, there can be little doubt; but that vaccination is more generally neglected now than formerly, is open to question. The prevalence of small-pox among the protected is by no means a matter of such rare occurrence as is generally supposed. I believe that we are capable of showing that the proportion of post vaccine cases treated in hospital is actually larger than the number of unprotected, and that instances of the former class have been considerably on the increase for some years past. To demonstrate this more forcibly, it would have been advantageous to have selected a larger series of data than I have at present at command. The records of the Infirmary, however, are not sufficiently comprehensive to embrace these points; but at several stated intervals when small-pox was more than usually prevalent, the primary characteristics have been sedulously noted. I am indebted for the materials used in the construction of the following table, to the already published investigations of Drs. Cowan,* Orr,† and A. P. Stewart;‡ the data furnished by the last three years of the series being the result of my own enquiries. The doubtful cases have been purposely omitted in the table, accounting for the discrepancy when compared with the actual number treated in hospital:—

Year.	Total.	Vaccinated.	Unvaccinated.	Deaths in Vaccinated.	Deaths in Unvaccinated.
1836	95	55	40		26
1837–38	71	31	40	1	15
1846	99	47	52	2	8
1849	42	23	19	3	8
1851	128	52	76	8	17
1852	101	57	44	5	12
Total Cases,...	536	265	271	19	86

The manifest advantages accruing from vaccination are here vividly illustrated; for while the per centage mortality among the unprotected is shown to reach 31·3, the post vaccine deaths amount to 7·1. Notwithstanding this favourable feature, the occurrence of such a large number of cases among the protected, is sufficient to excite considerable misgivings with respect to the alleged efficacy of vaccination. With but few exceptions, these have occurred after the age of puberty; and the disposition of the disease to attack at that period would lead us to infer, that certain constitutional changes are liable to take place among many people, which render them more susceptible of the variolous miasm. Statistics drawn from other sources tend to corroborate these results. Out of 1519 admissions to the Small-pox Hospital, from 1826 to 1839 inclusive, and reported by the late Dr. Gregory,§ as having small-pox at variable periods after vaccination, 100 terminated fatally, presenting a per centage of mortality on a much larger scale, but corresponding in amount with that of the Glasgow Hospital. It will be observed that over the whole cases the proportion of vaccinated and unprotected is nearly equal; and that while the numbers are seen to diminish in an unequal ratio for one year, they usually reverse the process in the next. It would seem that when an epidemic of small-pox begins to decline in severity, that is to say, after it has reached its culminating point, it exhibits a greater tendency to attack the previously vaccinated than it showed at the outset. I suspect we are bound to consider the years 1851 and 1852 as essentially epidemic years; nor are we yet free from an unusual and extensive prevalence of the disease: the number of vaccinated cases, however, is diminished materially from the corresponding returns of 1851, and the first half of 1852. In a Report recently read to the governors and subscribers of the London Small-pox Hospital,* it appears that during the last year a larger number of patients have been admitted than were ever treated for a similar interval, since the foundation of the hospital in 1746. In 1851 the admissions amounted to 682, out of which only 230 were vaccinated; and during last year, 1852, the admissions had risen to 800, and showed an increase of post vaccine cases, over 1851, of no fewer than 120.

---

* Vital Statistics. † Op. cit. ‡ Monthly Journal of Med. Science, Oct. 1851.
§ Lectures on the Exanthemata.

The form which the disease assumes is a feature in its history, that is necessary to bear in mind, when speculating on the ultimate issue of the two classes noticed above. In the following table I have analyzed 101 cases treated to a termination during 1852, reducing the forms, for convenience of description, to two, namely, discrete and confluent small-pox:—

Confluent and Malignant Small-pox.

	Total.	Cured.	Died.
Males, vaccinated,....	7	5	2
Females, do.	7	6	1
Males, unvaccinated,.	16	8	8
Females, do.	11	7	4
Total,.........	41	26	15

Discrete and Modified Small-pox.

	Total.	Cured.	Died.
Males, vaccinated,...	26	24	2
Females, do.	17	17	0
Males, unvaccinated,	8	8	0
Females, do.	9	9	0
Total,.........	60	58	2

Hence it follows, that out of 44 individuals, who had no previous protection, 27 were attacked severely, while 17 escaped with a mitigated illness. The two deaths which occurred among the discrete cases, were produced by internal inflammatory complications supervening on the disease. It will be observed that males have suffered more, both in numbers and fatality, than females. An interesting example illustrative of the non-identity of small-pox with vaccinia, occurred in a female, whose case is incorporated in the number of discrete and vaccinated cases. It appeared from her history, that several days previous to attack she had undergone vaccination; and on admission the vaccine vesicle was found fully matured. The two diseases proceeded simultaneously to a favourable termination, without apparently interfering with each other's progress—the patient undergoing a pretty smart attack of discrete small-pox. Cases of secondary or recurrent small-pox are rarely met with in this hospital. In the course of my enquiries, I have been able to discover one instance of this kind only, which occurred in an Irishman, who affirmed that he had a primary attack in childhood. This man had a well-marked cicatrix on his arm.

---

* *Morning Post,* 5th February.

The disposition of small-pox to attack individuals, immediately on their transference from an open and salubrious locality to one in which the disease constantly prevails, is a feature of considerable importance in its pathology, inasmuch as the influence of climate is here more manifest than in other maladies of a similar endemic character. This remark, however, is not applicable to children, it being generally understood that the great majority of the young attacked are natives of the city. The following table, detailing the length of residence in Glasgow of the 101 cases formerly cited, will enable us to judge of the comparative frequency of small-pox among recent residents:—

Under two weeks,..............	10
From two to four weeks,......	14
From one to two months,.....	4
From two to three months,...	3
From three to four months,...	6
From four to five months,....	6
From five to six months,......	19
From six to twelve months,..	19
From one to two years,.......	6
From two to three years,.....	5
From three to six years,......	7
Six years and upwards,........	2

It will be noticed that no fewer than 81 individuals out of 101 had been less than twelve months resident in Glasgow, and that 24 of this number had been less than one month. The peculiar susceptibility among recent residenters, no doubt obtains with greater force when the variolous miasm spreads epidemically, but it would be difficult to find more corroborative evidence of the influence of climate and residence than that presented by the preceding table. Following up this department of inquiry, we are next led to trace the various localities from which patients have come, or where they may have spent the early period of their lives. A correct knowledge of these places will prove exceedingly useful, in detecting the districts of country where the practice of vaccination is neglected, the subject urgently demanding the attention of all philanthropic minds; and in the event of a persistance of this neglect, it must at no distant period require the interference of the legislature. With the view of ascertaining in what parts of the West of Scotland vaccination is chiefly neglected, I have drawn up a list containing, with other information, the parish in which each patient was born; but as this catalogue is too extensive for insertion, and not of much interest to the general reader, it has been condensed into the following table, which incorporates the returns of 1849 with 1852, and extends over 143 cases of the disease. The returns of the respective years afford very similar results, and need not be figured separately:—

Birth-place.	Total Cases.	Vac.	Unv.	Birth-place.	Total Cases.	Vac.	Unv.
Argyleshire,	56	24	32	Counties south of Forth & Clyde,	35	30	5
Inverness-shire,	7	5	2	Born in Glasgow,	4	1	3
Aberdeenshire,	4	3	1	England,	3	3	0
Ross-shire,	3	1	2	Ireland,	19	9	10
Sutherlandshire,	2	1	1	Foreign Countries,	4	2	2
Perthshire,	5	1	4				
Shetland,	1	0	1				
				Total	143	80	63

Hence it appears, that out of 63 unprotected cases, 43 have been natives of the Highlands, 10 were born in Ireland, 5 in Lanarkshire and the neighbouring counties, and 3 had been permanently resident in the city. The greater liability of the Highland population is no new feature in the local history of small-pox. Twenty years ago Dr. Cowan drew public attention to the fact, and there are few medical men in Glasgow who have not had ample evidence of the same, in the course of their own experience. Nor is it the case, as has been too frequently affirmed, that the Highland poor show a decided aversion to vaccination. There are good grounds for believing that the proverbial laxity which prevails among them regarding the practice, arises more from ignorance of its beneficial influences, rather than from prejudice or unwillingness to adopt it. If properly investigated, the secret of the neglect may be mainly traced, to the importance of the remedial agent not being sufficiently impressed upon a people, whose ignorance of its protective powers arises chiefly from the immunity which they enjoy in their native homes, even in their unprotected state, from the ravages of a malady, that is found to decimate their numbers, when tempted by poverty or ambition they seek to mingle in the pursuits of urban life. The prejudice in favour of variolous inoculation, with which practitioners in various parts of England have to contend, notwithstanding the legal enactment of 1840, does not appear from any authority to extend itself to any part of Scotland. In the country parishes, and to a less extent in the towns, the poor are largely influenced by their clerical instructors, whose labours for the advancement of the social as well as the spiritual wellbeing of the people, are universally acknowledged. By this class especially, seconded by the united exertions of the various parochial authorities throughout the Highlands, an immense deal of good remains yet to be effected. It is to be regretted, however, that in many districts the difficulty of obtaining the services of a medical man to perform vaccination, is of a nature to militate against its general adoption. The sequestered islands of Coll and Tiree, in which small-pox seems only to be known by its occasional importation from the low country, annually contribute their quota of unprotected to the small-pox wards; and the respected minister of these islands writes, that several lives are annually lost in the parish from the want of a medical practitioner.* Surely the Poor Law Board of Supervision is vested with sufficient power to remedy such defects. In considering the tendency of small-pox to engraft itself on the Celtic inhabitants, it is interesting to observe with what tenacity it clings to the Scotch branch in preference to the Irish, a feature rendered more striking by keeping in view the disproportion which the former bear to the latter in the mass of population. While the Highlanders form 44 per cent. of the cases analyzed in the preceding table, it will be found that natives of Ireland amount to only 13 per cent. of the whole. In the various forms of continued and typhus fever, natives of Ireland average usually from 60 to 65 per cent. of the whole admissions to the Fever Hospital, and in the ordinary medico-surgical wards, the number is never below 35 per cent. The partial immunity which the preceding disparity in numbers, would lead us to suppose the Irish enjoyed from the ravages of small-pox has been frequently discussed, though never satisfactorily explained. Dr. Cowan, and others, have attributed it to the sedulous attention paid to vaccination in their own country among the lower class of Irish, by the Union and Dispensary surgeons. If this were still the case, we would expect to find in our hospital experience, much fewer cases of an unprotected character than are annually met with, and that the beneficial effects of the agent would also be extended by parents to their offspring; whereas the reverse will be shown to be the rule, the infantile small-pox mortality among this class proving prodigious. The returns of the Government Census, however, prove beyond all doubt that vaccination must be greatly neglected in Ireland, from the large and increasing numbers who have of late years been cut off by small-pox in that country. I believe that this peculiarity of exemption among the adult Irish resident in Glasgow, is explicable on the ground of a combination of circumstances rendering them for the most part constitutionally unsusceptible of the variolous miasm, while it aggravates the predisposition to other zymotic affections of a less severely contagious character. The exhausted and depressed condition of frame so frequently met with among the class, tends to accelerate the formation of typhus and continued fevers, and notwithstanding the same causes operate in a similar manner with respect to all contagious maladies, their influence is much more appreciable in the former than in the exanthemeta. The characteristics alluded to, as distinctive of two important divisions of the population, will be recognized by those who have observed minutely the peculiarities of temperament and constitution of the two classes, as they present themselves for admission to hospital, and elsewhere.

---

* New Statistical Account of Scotland.

The ages of the individuals attacked with small-pox is the next step in the course of investigation. In the unprotected state, the liability of attack at all ages is well known, and requires no comment. It is different, however, with the vaccinated. The following table includes only the 57 cases who had small-pox after vaccination, in 1852, and of which there were—

Under five years,.............	3	From twenty-five to thirty,	8
From five to ten,..............	2	From thirty to forty,.........	3
From ten to fifteen,...........	1	Upwards of forty,.............	0
From fifteen to twenty,.......	21		—
From twenty to twenty-five,	19	Total,..................	57

The interval between the period of vaccination and the onset of the disease is thus shown to range from one to thirty-five years, but it will be observed that the disposition to attack has reached its maximum between fifteen and twenty-five; no fewer than 40 cases out of the 57, occurring during this decennium, when the constitution is usually considered to be in its greatest vigour. After the age of thirty, it does not appear that the liabilities are so numerous. Out of 298 post vaccine cases occurring in 1838, in the practice of the London Small-pox Hospital,* only 17 were above the age of thirty, and 14 of that number were below thirty-five. The major part of the unprotected treated in 1852, in the Glasgow Hospital, occurred immediately after the age of puberty, only 3 being reported as above the age of twenty-five. The infantile period of human life affords, in Glasgow, by far the largest number of deaths from small-pox; but as children are debarred, except under very pressing circumstances, from admission to hospital, the data respecting them are too limited for analytical purposes. Through the kindness of Mr. Patrick, the gentleman who has the charge of collecting and publishing the Monthly Returns of Mortality for the city and suburbs of Glasgow, I have been favoured with the materials for the construction of the following table, detailing the number, sex, and age of the various individuals cut off by small-pox in the course of 1852. The total deaths amounted to 584, of which there occurred—

	Total.	M.	F.		Total.	M.	F.
Under 1 year,...	188	96	92	From 25 to 30 yrs.,	2	1	1
From 1 to 2,.....	150	72	78	From 30 to 40,....	8	4	4
From 2 to 5,.....	189	101	88	From 40 to 50,....	1	1	0
From 5 to 10,...	20	13	7	From 50 upwards,	1	0	1
From 10 to 15,..	4	1	3				
From 15 to 20,..	2	0	2	Total,.......	584	300	284
From 20 to 25,..	19	11	8				

---

* Lectures on Eruptive Fevers.

It follows, therefore, that among the total deaths from small-pox in 1852, 527 were under five years of age, 24 occurred between the ages of five and fifteen, and 33, or 1 in 17¾, took place after the period of puberty. In comparing the data with the returns of 1835–36, since that period affords a more accurate and detailed statement of the ages than any other, we find little variation in the proportion of deaths to the various ages:—

	Under 1 year.	1 to 2.	2 to 5.	5 to 10.	Above 10.	Total.
1835	204	154	75	17	23	473
1836	202	174	144	23	34	577
1852	188	150	189	20	37	584

For the three years, the annual average number of deaths under 10 years of age will be seen to amount to about 513, and when compared with the average returns for ten years after the introduction of vaccination, they exhibit an increase of more than 400 annually. In calculating the vital results attendant on any class of diseases, it is also necessary to bear in mind the great increase of population which has taken place in Glasgow during the last half century. A correct knowledge of these changes will tend greatly to relieve the alarm that would otherwise be felt, at the augmented amount of mortality presented by many of the more common diseases. But after making due allowance for this in the case of small-pox, it will still be found that the number of deaths resulting therefrom, when compared with localities where vaccination is sedulously attended to, is inexcusably large.* Let us take, for example, the most recent returns of mortality for the city of Paris. There we find that in a population of one million, the number of deaths from small-pox in 1850 was 342, and in 1851 it amounted to 364,† while in Glasgow with its population of 370,000, no fewer than 1202 deaths have occurred during the last two years from the same cause. There is no country in Europe, with perhaps the doubtful exception of Prussia, in which vaccination is so thoroughly attended to as in France. It will be interesting, therefore, to know, as bearing on an important point in our present enquiry, the relative ages at which small-pox proved fatal in Paris in a given number of cases, and contrast them with the returns of our own Mortality Bills. The following table, constructed from similar returns in the Annuaire, represents the ages of 706 individuals cut off by small-pox in the city of Paris during the period above noticed:—

---

* Dr. Strang has drawn attention to the important fact, that in the two cemeteries exclusively reserved for the Roman Catholic population, there were in 1852 not fewer than 276 burials out of the 584 cases of fatal small-pox. In addition to this, there must have been a considerable number interred in the *neutral* burying-grounds.

† Annuaire pour L'an 1852-53.

	Total.	M.	F.
Under 1 year,	126	62	64
From 1 to 2,	32	17	15
From 2 to 5,	94	52	42
From 5 to 10,	31	16	15
From 10 to 15,	20	12	8
From 15 to 20,	51	34	17
From 20 to 25,	109	63	46
From 25 to 30,	89	58	31
From 30 to 40,	128	72	56
From 40 to 50,	22	13	9
From 50 upwards,	4	3	1
Total,	706	402	304

While the classification here noticed, presents an excellent example of the ages at which small-pox is likely to prove fatal, in a community in which vaccination is all but universally adopted, the table immediately preceding, and referrible to Glasgow, must, we fear, be considered as indicative of a locality in which vaccination is egregiously neglected. In Paris, the number of deaths under 5 years amounts only to 35·6 per cent., and in Glasgow, the same period of life furnishes no fewer than 90 per cent. of the total cases. It scarcely admits of doubt, that the comparatively large figure of mortality in Paris after 15 years has originated to a considerable extent among the previously vaccinated. On no other ground can we explain the fact of more deaths occurring between the ages of 30 and 40 than in the infant period of life, during which it has been established, that, in the unprotected state, two-thirds of children are attacked by small-pox, and that on an average 1 out of every 3 attacked dies. It is, however, satisfactorily proven, notwithstanding the occurrence of a considerable number of deaths in adults, that by the persevering extension of vaccination over France, an immense saving of human life has been effected, especially of late years. The Bulletins of the Royal Academy of Medicine are quite decisive on this point. These documents show, that during the mid-period of the last half century, in consequence of the rigid enforcement of vaccination, the deaths in Paris alone fell from 1090 to an annual average of 420, and more recent returns exhibit a still further diminution to 353.

From the observations already made, the inference naturally forces itself, that at certain ages and under peculiar circumstances, the most prominent of which are change of residence and exposure to concentrated miasm, the constitution becomes re-susceptible of the variolous poison, notwithstanding the vaccine protection. This susceptibility has not manifested itself to a very fatal extent, in the returns we have been able to adduce relative to Glasgow, chiefly from the cogent reason, that those predisposed to contract the affection, are for the most part visited with it in early life, and in the event of recovery, the primary attack affords an efficient safeguard for the future. To remedy this important defect in the permanent influence of the cow-pock, recourse has been frequently had to re-vaccination, and the process is very generally recommended, though not so frequently adopted by medical men. So common indeed has post vaccine small-pox become in several countries on the Continent, that the governments of Denmark and Prussia, impressed with the importance of the protective agent, issued orders many years ago for the re-vaccination of their standing armies. The success of a similar trial in Wirtemberg has likewise induced the authorities of that country to extend the operation to the whole civil population, with what results we are as yet unable to determine. Its propriety has been called in question in consequence of small-pox occurring in numerous instances after a second and even after a third vaccination, but it is unjust to argue on this ground alone that re-vaccination is entirely useless. All things considered, we would be disposed to look upon the expedient as safe and harmless, and that its practice is peculiarly applicable at the present time, for the future protection of that large class of the community, who are leaving the country to settle in other parts of the world.

It has frequently been made the subject of regret that the provisions of the Vaccination Act of 1840 were not extended to Scotland. The beneficial results obtained from its operation in England and Wales, are sufficient to warrant the inference, that it would have been attended with similar advantages in Scotland; but it is questionable whether the working of the Act has ever yet fulfilled the expectations of its originators. Besides the rendering of the practice of inoculation illegal, which the Law has effectually accomplished, it is equally desirable that the non-performance of vaccination should be considered illegal also. It is only by some stringent measure of this kind that the protective agent will become universal; and when universal, it can have no claim to be considered in the light of eradicating the disease, but simply as a means of greatly mitigating its mortality and prevalence. Medical authorities, in this country at least, are at variance with respect to the comparative merits of inoculation and vaccination; but, by reason of the enactment, the majority are restricted to the latter alternative. In Scotland, where no such law prevails, a similar practice is very generally followed, since there are few who would risk the danger of spreading real small-pox by the isolated foci of contagion, which inoculation must inevitably originate. I have no intention at present of entering on the vexed questions relative to the two different means of protection; it is sufficient to know that the one affords a sure, the other a doubtful, safeguard against the ravages of small-pox, but that the advantages in favour of the former are more than counterbalanced by the host of evils that would of necessity ensue, unless the practice was universally adopted. With a knowledge of these facts, it is surely the duty of all who are interested in the welfare of the poor, and the special duty of those intrusted with the management of the poor, to exert every legitimate means in their power, with the view of checking the ravages of one of the most destructive and loathsome diseases which affect the human frame. It may be argued that few places offer more facilities and better opportunities for universal vaccination than Glasgow; that there are no fewer than five separate stations throughout the city where vaccination is performed gratuitously, and that it is rendered incumbent on the parochial surgeons that they should be constantly supplied with lymph, and be at all times ready to vaccinate the poor in their own localities.* That all these measures have proved ineffectual in checking the increasing evil, has been fully demonstrated in the course of the preceding remarks, and it now only remains to suggest a remedy that would prove more effective than any hitherto had recourse to.

It is useless to anticipate more benefit than that already furnished to the poor, by the establishment of additional stations for vaccination. The introduction of some plan that would appeal more directly to the moral feelings, and at the same time be partly coercive in its operation, is the only way in which, I believe, the desirable end in view is to be obtained. If by authoritative arrangement or otherwise, it was rendered imperative on every parent, and also on the clergy of every denomination, to see that vaccination was duly performed before the child received the rite of baptism, no one can doubt that our annual mortality would be most materially diminished. Another plan, calculated to prove equally effectual and beneficial, would entail a considerable amount of responsibility on the medical attendant, by making it incumbent on the individual who superintends the delivery of the child, whether accoucheur, midwife, or medical student, to see that it is properly vaccinated within a given period after birth. The absence of a proper system of registration in Scotland, necessarily precludes the possibility of enforcing any measure relative to vaccination, that might have an analysis of the actual births as a groundwork for its operation, and an increased responsibility is thereby entailed on the various Parochial Boards, who must now be considered as the guardians of the public health, as well as the guardians of the poor. The subject is doubtless beset with many difficulties, but there are few evils of any magnitude that are not equally surrounded, and for the removal of which the enforcement of some stringent practical remedy is not absolutely necessary. These remarks have been written with the avowed object of calling public attention to an existing and growing evil of this nature, and if they prove of sufficient importance in directing the attention of the profession, or of the authorities, to the consideration of any feasible project whereby a few lives may be saved, from among the hundreds that are annually sacrificed in Glasgow to the ravages of small-pox, the writer will willingly bear the obloquy, of having presumed to trespass on ground on which wiser and older men have vainly sought to travel.

---

* The following represent the stations in Glasgow at which vaccination is performed gratuitously, and an approximation to the number of recipients at each place during the past year:—Faculty Hall, St. Enoch Square, 172; Medical Association, St. Andrew Square, 253; University Lying-in Hospital, about 200; Lying-in Hospital, St. Andrew Square, about 110; Eye Infirmary, 90. Besides these, there were vaccinated by the Parochial Surgeons of the City Parish, 73; Govan Parish, about 70. There are no returns from the Barony Parish.

VIII. *Cases in Clinical Medicine.* By ROBERT MACGREGOR, M.D., Physician to the Royal Infirmary of Glasgow.

ALBUMINURIA.

Case I.—Patrick Currie, aged 40, labourer, admitted October 14, 1851.

Three months ago caught cold, and had a slight cough, which within the last three weeks has much increased in severity, particularly at night. Complains of no pain in his chest, or lumbar regions, but much of rheumatic pains in the joints, and between his shoulders. Has suffered much for some days from constant headache. Sputum expectorated with much difficulty, and limited in quantity. On the application of the stethoscope, respiration is found somewhat weak on the right side anteriorly, forced inspiration on the same side being followed by a cooing sound. Percussion is normal. Broncophony is heard on right side of thorax, in infraclavicular, supraclavicular, and mammary regions, and heart's sounds are plainly heard over the whole of the same side. Præcordial dulness is normal, and heart's sounds natural. The dulness in the hepatic region is extended an inch and a-half beyond the margin of the ribs, and some tenderness is complained of on pressure over the protruded portion. Lower extremities are stated to become œdematous after a day's work, but the swelling disappears on remaining in the horizontal posture for some hours. Pulse 78, of fair strength; bowels regular; appetite good; urine natural in colour, having a spec. grav. 1·016, and an acid reaction. Gives a copious white precipitate of albumen when treated with nitric acid and heat. *Mixture with syrup of squills, ipecacuan wine, and tincture of hyoscyamus.*

18*th October.*—Blood drawn from arm in small quantity, had a spec. grav. of 1·037, and its serum 1·018. *One drachm of the solution of the sesquinitrate of iron every four hours.*

20*th.*—Complains of pain in right renal region, extending to the hypochondrium, and increased on pressure. *Cupping-glasses to the pained part. One-fourth of a grain of powder of elaterium three times a-day.*

23*d.*—Has been complaining of severe headache since last night, and is rather feverish. *Six leeches to temples.*

31st.—Has still some headache, but feverishness has gone off. Bowels not freely moved; urine high coloured, spec. grav. 1·022, giving a copious precipitate with heat and nitric acid.

November 13.—Complains of pain and tenderness in right hypochondrium, with pain in front of the right shoulder. There is also an extension of the hepatic dulness. *Leeches to the region of liver.*

14th.—Hepatic pain almost gone, feels weak. Pulse 88, soft; urine contains as much albumen as ever.

December 29th.—Has been feeling easy since last report, and is dismissed relieved by desire.

Commentary.—We have had no evidence from the patient that he had been intemperate; and in hospital practice, in this respect, there is a frequent want of links in the case. There is sufficient proof of the chest affection, and of that from organic disease, induced in all probability by atmospheric changes or exposures. Indications of hepatic congestion and extension were present. Yet these may have resulted from encroachments by the pneumonic organs. It is probable that the Bright's disease accompanying these may have been produced by the cause which gave rise to the former, viz. the application of cold, causing a determination of blood to the internal organs, with a suppression of the cuticular discharge. The treatment was directed towards determining to the intestinal canal and diminishing the action of the kidney. The examination of the urine and blood confirmed what has been advanced, in regard to the attenuating effects of this disease upon the blood, and of its rendering the surface anæmic. The iron was administered with a view to obviate this, as will be stated in the sequel.

Case II.—George Arthur, aet. 67, horse-keeper, single, admitted Feb. 8. Present illness of five weeks' duration, having commenced with a rigor followed by headache, pain in micturition, great drowsiness and inclination to sleep, excessive thirst and general debility, together with swelling of the legs, and integuments of the body. Is of intemperate habits, but always enjoyed good health previous to this attack.

On admission the above-mentioned symptoms still continue, and he complains of pain in the front part of his chest, with occasional palpitation. The whole body is anasarcous. The abdomen and legs are much swollen, no fluctuation can be detected in the former, yet both pit freely upon pressure. Has no cough. There is a slight increase of the cardiac dulness, and the whole thorax sounds duller than natural. There is also some extension of dulness in the right hypochondrium, towards the epigastrium, but owing to the œdematous state of the integuments, nothing definite can be made out. Over the whole of both sides of the chest loud dry sibilus and rhonchus are detected. The rhythm of the heart is natural but the sounds are weak.

The pain in voiding urine still continues. The urine has a specific gravity of 1·015, an acid reaction, and is loaded with albumen. Tongue white; bowels open; pulse 99, small and hard; skin dry. *Squill mixture with tartrate of antimony. Blister to chest. One-fourth of a grain of elaterium with three grains of scammony, twice a-day.*

27*th.*—Has continued medicines since; breathing is more free, and arms and legs are less swollen. *Continue.*

March 7th.—Four ounces of gin daily.

27*th.*—Swelling of legs has disappeared, and chest sounds are natural. Dismissed improved 8th April.

Commentary.—This case resembles the former very much in its attack. The drastic purgatives were administered with a view to determine from the kidney to the intestinal canal. The digitalis was prescribed as a sedative diuretic, and the gin as a tonic, though it may be questioned by some physicians, whether any stimulating liquors should be given in such cases.

Case III.—Thomas M'Ghie, aet. 36, single, a shepherd, admitted 28th April. Patient has been ill for eight months with an affection of the stomach, having been unable to retain any food until within the last ten days. At present there is œdema of feet and legs, which pit freely upon pressure. There is considerable enlargement of the abdomen, with distinct fluctuation, but no tenderness upon pressure; heart's action is natural; respiration fair; pulse 108; tongue moist; bowels pretty regular; the urine has a specific gravity of 1·012, an acid reaction, and contains a quantity of albumen. *Eight grains each of calomel and scammony.*

29*th.*—*Half a grain of elaterium and one grain of calomel every third hour.*

May 3.—Had a short rigor about an hour ago, and is at present (9 P.M.) in a state of general pyrexia; tongue whitish; pulse 116, small; bowels loose; skin hot and dry. *Diaphoretic mixture.*

4*th.*—Complains of pain in abdomen, which is hard, tympanitic, and very tender to the touch. *Twelve leeches to abdomen, and afterwards fomentations. One grain of opium every second hour to four doses.*

5*th.*—Died at 3 A.M.

Permission to examine the body was not obtained. Though the Bright's disease was but of short duration in the hospital, yet it had eight months of existence previous to his admission, when he was found to have, in addition to an irritable stomach, disease of liver and kidneys, with the peritoneum probably in a state of passive inflammation, which may have been rendered acute by the air of the hospital, or by the strong medicines used for his relief.

Case IV.—William Montgomery, aet. 23, miner, single, admitted 28th April. For the last three or four years patient has been complaining of pains in the loins, at the cardiac and epigastric regions. On admission, these symptoms still continue, and there is a little tenderness upon pressure over these regions. He has also acid eructations, but no vomiting or palpitations. There is slight œdema of lower extremities, and some swelling with fluctuation in the abdomen. Heart's action and the respiratory murmur both normal, and no hepatic enlargement; tongue white and moist; bowels regular; pulse 68, good. He has considerable heat and scalding pain during micturition; urine is very red in colour, specific gravity 1·010, reaction acid, gives a coagulum with heat and nitric acid, but when examined microscopically, is found to contain blood corpuscles. A catheter passes readily into the bladder, and there is enlargement of the prostrate gland. *Cupping-glasses to lumbar region. Infusion of linseed for drink.*

May 3.—Quantity of blood in urine much diminished, and pains in loins less severe. *Repeat the cupping.*

13*th*.—Has been improving since last report, but urine scanty. *Ten drops of tincture of digitalis thrice a-day.*

21*st*.—Swelling of legs and abdomen nearly gone, but complains of pain in the region of the kidneys. *Repeat the cupping.*

28*th*.—No œdema of the lower extremities nor swelling of the abdomen now remains. Urine has increased in quantity and quality, and retains but a mere trace of albumen with but a few blood globules.

June 7*th*.—Dismissed well.

It appears to me doubtful whether the foregoing case belongs to any of the forms of Bright's disease, and the microscope declared it to be rather a case of hæmaturia, arising from some irritation in the kidney, or its outlet, while the result of the treatment proved it to be more manageable than albuminuria.

Case V.—Joseph Caldwell, aet. 23, dyer, single, admitted 26th July.

About three months ago says that he had a febrile attack, and a month after the lower extremities became anasarcous, and are now much enlarged. The belly is also increased in size, and fluctuates distinctly. General health seems good, pulse 88, soft; tongue clean: bowels regular; urine is copious and brown, has a specific gravity of 1·020, and contains a large amount of albumen. *Powder of elaterium, calomel, scammony, and jalap three times a-day.*

31*st*.—Blood drawn from the arm had a specific gravity of 1·040. That of serum 1·019. *Tartrate of iron and potash, fifteen grains thrice a-day.*

September 21*st*.—The face is rather more swollen, yet the anasarca and ascites are somewhat less. A small quantity of blood now drawn from the arm gives a specific gravity of 1·037, while its serum gives 1·017.

October 1*st*.—Was this day dismissed somewhat relieved, the general dropsy being less, though the urine contained as much albumen as ever. He was desired to call and report himself. His appetite had fallen off.

27th.—Patient called to-day, and stated that he felt much better since he went out, dropsy having almost disappeared. He says that he has been using a decoction of broom with the spirit ether. nitros. The urine is pale yet muddy, has a specific gravity of 1·016, and still contains a large amount of albumen. Pulse 68, of fair strength; general health is good, and the appetite has improved.

29th.—Presented himself to-day to all appearance well; intends to resume his work as a dyer, although it exposes him to damp and wet. He complains of shooting pains down front of the tibiæ; urine is still pale and muddy, has a specific gravity of 1·017, and gives a copious white precipitate by heat.

November 4.—Called to-day and says that he is still improving; has slight swelling of the lower extremities, which pit upon pressure. Pulse 75, of good strength; bowels free; appetite good; is using the infusion of broom and juniper; urine the same in appearance, with a specific gravity of 1·015, and loaded with albumen. He has not begun work yet, but proposes to do so next week.

Commentary.—It frequently happens that this disease, in grown up young men and women, has its origin in exposure to cold, and its early concealed stage is accompanied with fever, a dry and hot skin, and some tenderness in the lumbar region. The symptoms are often obscure at the commencement, and the attention of the physician and of the patient is not called, and remedies therefore not applied, more particularly in hospital practice, and even in private practice, until the disease has acquired a seat, from which it is difficult to be driven. The more so in those cases where the cause has been of a slower and more insidious character, such as intemperance, &c. Yet the numerous researches made from time to time since Dr. Bright's observations have been made known, testify that this disorder is very common, and requires every degree of watchfulness.

Case VI.—John Gilchrist, aet. 54, married, labourer, 20 years in Glasgow, admitted 1st October. Seventeen days since, began to experience unusual fulness at epigastrium after meals. Three days after, face and feet became swollen, and on admission there is swelling of feet, legs, and thighs, while every portion of the trunk pits on pressure. The abdomen is full, but not tympanitic. Heart's sounds are dull; the general health is good. Has a slight cough, and bronchial respiration, with occasional sonorous râles heard over most part of the chest. Pulse 56, firm; tongue clean; bowels regular; urine pale, muddy, spec. grav. 1·015, and contains a considerable quantity of albumen.

2d October.—Has a slight degree of pain in renal region. A small quantity of blood drawn from the arm had a spec. grav. of 1·043, while that of its serum was 1·020. *Cupping to twelve ounces from lumbar region. Tartrate of potash and iron.*

October 6*th.*—Swelling not much diminished, and bowels slow. *One-sixth of a grain of elaterium, with jalap and scammony, four times a-day.*

12*th.*—Not much improvement in the limbs. Bowels acting sluggishly. *Elaterium to be increased to a quarter of a grain, four times a-day.*

15*th October.*—Purging freely, and swelling is diminishing.

31*st.*—Swelling still decreasing. Bowels free; urine has a pale, somewhat muddy appearance, spec. grav. 1·011, and contains a large amount of albumen.

10*th November.*—Has considerable flatulence. General health is good. Continued in the ward until the 9th of December, somewhat improved.

Commentary.—The treatment followed here, as in the preceding case, was intended to diminish the action of the kidney, by cupping and drastic purgatives, including calomel. This last has been objected to by some on the score that mercury introduced largely into the system, even of persons labouring under other diseases, renders the urine albuminous, and if so, increases the effect which it is the object of its administration to diminish. Numerous examinations have been made in the hospital, but I failed in substantiating any such property in mercury. Dr. Rees' experiments testify to the same effect.

Case VII.—Robert Elliot, aged 30, married, joiner, October 15. Has suffered from rheumatic pains for 18 months past. Five months ago, swelling appeared in the abdomen, without any known cause. Has obscure pain in lumbar regions, slightly increased on pressure over renal regions. Complains of great debility. Fluid is easily detected in abdomen by percussion, and by fluctuation. Heart's sounds are normal, and præcordial dulness natural. Tongue clean; bowels regular; pulse 84; urine of natural colour, spec. grav. 1·010. No precipitate with heat alone, but on the addition of nitric acid, a distinct precipitate of a white colour falls. *Lumbar region to be cupped.*

18*th.*—Urine is now found to contain a larger amount of albumen, spec. grav. 1·010. Blood drawn from arm of spec. grav. 1·040, while its serum has a spec. grav. of 1·023. *To have solution of sesquinitrate of iron every four hours. One-fourth of a grain of elaterium four times a-day.*

28*th.*—Vomits the powders, but is freely purged. Dropsy less. *To take the powders after meals.*

31*st.*—Progressing favourably. Urine is clear, of a natural colour, spec. grav. 1·007; albumen slight in quantity.

November 28.—Has been using the iron solution and purgative powders since last report. Urine, spec. grav. 1·007, and contains much albumen. Was now sparingly bled from the arm, and the spec. grav. of the blood was found to be 1·038. Patient was dismissed on the 16th December, in the condition now described.

Commentary.—This, as well as the preceding cases, shows the power which this disease has of attenuating the blood by the constant reduction of its specific gravity.

Case VIII.—Matthew Moffat, aet. 25, carter, six years in Glasgow, admitted 10th November. Six weeks since had a chancre, and a bubo, which was opened. Took mercury, and a month ago, while mouth was sore from it, exposed himself to cold, when feet and legs began to swell. At present there is general anasarca; face and eye-lids swollen, countenance pale and of a waxy appearance. Complains of a slight cough; occasional cooing heard over chest. Chancre and open bubo still remain. Pulse 84, soft; bowels open; tongue clean. *Twelve ounces of blood from lumbar region by cupping. One-third of a grain of elaterium thrice a-day.*

11*th.*—Urine is pale, of spec. gra. 1·010, contains a large amount of albumen. Chancres touched with nitrate of silver, and bubo dressed with simple ointment.

17*th.*—A small quantity of blood drawn from arm gave a spec. grav. of 1·030 only, that of its serum 1·015. Has not improved; felt some oppression in breathing last night; eyelids have swollen considerably since admission; has copious watery stools from the elaterium.

27*th.*—Omit elaterium. *Ten drops tincture digitalis thrice a-day. One grain gamboge and two of scammony thrice a-day.*

28*th.*—Became drowsy, and had muttering delirium, with a sunken appearance of the face, and died in the course of the evening.

1*st. Dec.*—Sectio cadaveris. The cavity of the abdomen contained several pints of yellowish serum; both lungs were healthy looking; the pleural cavities contained a few ounces of fluid; the heart was slightly enlarged, but normal otherwise; the liver was hard and atrophied; both kidneys were enlarged, the right weighing 6½ oz. the left 5½ oz. were pale, flabby, and presented good specimens of fatty degeneration. The relations would on no account permit the head to be examined.

Commentary.—It has been already hinted, in a previous case, that my observation did not lead me to infer, that a mercurial salivation of itself would produce the presence of albumen in the urine; yet a first view of this case would naturally lead us to suppose, that the death consequent upon Bright's disease, had been produced by the exposure to cold under mercury. But we must reflect that the patient had been a carter, and intemperate; that the disease may have existed previous to the first dose of mercury having been taken; and I have no doubt that it must have been brought into great activity by the exposure. It is possible that simple exposure to cold while under mercury, may give rise to an inflammatory attack in the kidney, which may end in some stage of Bright's disease. Yet the advanced stage of Moffat's renal disease, would scarcely permit us to infer that it did advance so far within four weeks. The drowsiness during the two last days would be usually attributed to uræmia.

Case IX.—John Young, aged 37, married, carter, at Maryhill, admitted 29th November. Two months since, without any assignable cause, felt pains across his chest, which did not attract much attention and went off without any treatment. Six weeks since, after more than usual exposure to cold and damp, feet were observed to become swollen. A week after, was seized with severe pain in both renal regions, but most acute in the left, which was leeched. Blood was taken from the arm, and in a few days the pains subsided. The swelling of the feet has however gone on increasing, and at present has proceeded as high up as the knee. In the abdominal cavity fluid can be detected. He has lost strength; pulse 92, soft; tongue clean; bowels open; urine of a pale milky appearance, and spec. grav. 1·028. The milkiness disappears completely on the application of a very gentle heat, and then the urine becomes quite limpid, while on raising the heat to the boiling point, a copious deposit of albumen takes place.

1st December.—Has pain in renal regions. Blood drawn from arm spec. grav. 1·036. *Cupping glasses to the loins. One-half grain of elaterium, with five grains of jalap, three times a-day. One drachm of the solution of the nitrate of iron four times a-day.*

4th.—Says that he vomits the powders and is not purged effectually. *Omit the powders. A colocynth pill every night, and three drachms tartrate of potash and soda every morning. Repeat the cupping. Imperial for drink.*

19th.—Complains of weakness, which he attributes to the drastic purgatives. *Omit the purgatives. Five grains of Dover's powder thrice a-day.*

25th.—Complains of tenderness upon pressure in region of both kidneys; urine still contains oily matter, and a considerable quantity of albumen; its spec. grav. is 1·031. *Tartar emetic ointment to be rubbed on region of kidneys.*

10th January.—Dismissed by desire.

Re-admitted January 17, 1852.—Abdomen measures in circumference 38 inches; feet are very œdematous. *Cupping the loins. Half a grain of elaterium, with three grains of scammony, thrice a-day.*

February 4.—*One drop of croton oil every night.*

13th.—Croton oil has operated well, and he has had copious watery evacuations; swelling of abdomen is much subsided, and œdema of lower extremities has quite disappeared.

Died on the 20th. No autopsy.

Young was seized with acute nephritis—as evidenced by the symptoms and history—from exposure to cold. He was leeched in the renal regions, and bled from the arm before admission. After admission he was liberally, and several times, cupped, and had drastic purgatives administered, and then tried with strong diaphoretics. The blood drawn from arm, two months after the commencement of the disease, had a spec. grav. only of 1·036. The urine had the unusually high spec. grav. of 1·031, contained a large quantity of oily matter, as well as a considerable quantity of albumen. This is the most singular case of albumminuria which has come under my notice. The urine was so striking, so oily looking, becoming quite clear on heating gently. The oily globules were seen beautifully under the microscope; and on treating the urine with ether, these globules were removed, and on evaporation thereof after decantation a copious residue of oil was obtained. Rayer describes such a case. Frerich alludes to Rayer's case, and declares that he has never seen one such. This is the only one I have met with, and so striking was it that the students and I made it a subject of daily examination in the ward.

Case X.—Elizabeth Wilkie, aged 10, school girl, admitted 12th December. About three weeks ago patient had sore throat, and symptoms of pyrexia, which was afterwards supposed to have been scarlatina, though no eruption had been observed. Ten days ago, attention was drawn to swelling of the feet and legs from inability to get on her shoes. The swelling soon became general, but was not attended with any pain or uneasiness. On admission, the whole body is anasarcous. The skin is white, dry, and shining; the legs and feet are greatly swollen, tense, and glazed, pitting deeply on pressure. Complains of some pain across the lower sternal region, but has no cough or pulmonary complication. Præcordial dulness seems slightly increased. Heart's impulse beyond the usual limits. Sounds loud, and extensively audible, the second being slightly roughened and prolonged. Tongue covered with white fur; bowels open; urine of natural colour, having a spec. grav. of 1·008, a very faint acid reaction, and loaded with albumen. *One-fourth of a grain of elaterium, with one grain scammony, thrice a-day. Six leeches to region of heart.*

14*th.*—The roughening or bruit not quite so loud, but still very audible. Pulse quick. *Blister to region of heart.*

18*th.*—Murmur still perceptible, but becoming fainter. Legs and feet much swollen, and skin very tense. A few punctures with the point of a lancet were made in both feet, and a quantity of serous fluid escaped. *To bandage legs.*

24*th.*—*One-fourth of a grain of tartrate of antimony in solution every third hour. Anodyne draught at bed-time.*

26*th.*—Endocardial murmur much stronger, and heard on both sides of the heart.

28*th.*—Patient is suffering much from the pain and swelling of left leg. The skin of left foot has become vesicated, and the integuments are now assuming a sloughy appearance. Pulse weak. *Four ounces of wine daily.*

30th.—Countenance expressive of great pain. Pulse weak; heart's murmur strong; tongue white; bowels open.

31st.—Died this morning.

1851. *January 2.—Inspectio Cadaveris. Thorax.* About 5 or 6 ounces of amber-coloured serum, mixed with shreds of coagulable lymph, were found in pleural cavities. Adhesions existed on both sides, firmer and more connected in the part of the left side adjoining the pericardium. Lungs much congested; heart firmly adherent throughout its entire extent to the pericardium. Both auricles and ventricles filled with fibrinous clots; auriculo-ventricular opening of the usual dimensions. Around the margins of all the valves in connexion with the heart, with the exception of those of the pulmonary artery, were found rows of small cauliflower excrescences, rather larger than a good sized pin's head.

Abdomen.—No fluid in abdomen, stomach distended with wind, and food half digested. Several patches of the mucous membrane in its great cul de sac, were of a brownish colour, and the membrane was abraded by the slightest touch. Both kidneys were enlarged, measuring 5½ inches in length, 2½ inches in breadth, and about 1½ in thickness. The right weighed 7½ oz. the left 8½ oz. The external surface of both was rather pale. On making a section, the cortical substance appeared fatty and anaemic. The tubular structure was congested, and very distinctly seen, and the tubuli were of large size. Spleen congested, mesenteric glands enlarged, urinary bladder healthy.

Commentary.—We have here Bright's disease in its most acute form, complicated with endocarditis occurring after scarlatina, as evinced before death by the general anasarca, the albuminous condition of the urine, and by its containing the numerous casts observed under the microscope. The dissection, which pointed out the extraordinary increase of volume in the kidneys over the normal in such a young subject, and in so short a space of time, would point out the necessity of having recourse to very active depletive measures, such as copious local bleeding, a liberal administration of antimony, and I should have no hesitation in adding mercury, with a view to promote absorption of the fibrinous or cell matter, poured into the tubules. It has also been recommended to administer active diuretics, in order to wash away the effused matter.

Case XI.—John Nichol, aged 27, labourer, admitted 2d Sept. 1852. States that two weeks ago, without any evident cause, both feet and ankles became affected with swelling, which gradually extended over all the body. The swelling at first subsided on assuming the recumbent posture. Has been under medical treatment previous to admission, without much benefit. Has had frequent asthmatic attacks. At present the legs, feet, and hands are much swollen, pit freely on pressure, and the integument is dry, tense, white, and shining. Abdomen is somewhat distended and tympanitic, but no fluctuation can be detected. Percussion of chest tolerably fair. Heart's action and sounds normal. Urine is natural in quantity and colour. Bowels open; tongue white.

3*d.*—Specific gravity of urine is 1·020, faintly acid. It is highly albuminous. *Blister to chest. Two drachms of jalap.*

4*th.*—Let him breathe frequently through water acidulated with sulphuric acid, placed in a stoppered quart glass bottle, by means of a wide tube.

16*th.*—Has had a convulsive fit, which lasted for about eight minutes.

17*th.*—Complains of sickness, with a tendency to vomit. *Three drops of hydrocyanic acid every third or fourth hour.*

October 2.—Has been breathing through the acidulated water regularly. *Ten drops tincture of digitalis three times a-day.*

26*th.*—Continuous rough cardiac murmur. General extension of sounds over thorax, but only in its anterior aspect. Cardiac dulness about an inch in extent. Liver enlarged and painful. *Two ounces whisky daily. One ounce carbonate of ammonia mixture every second hour. Omit tincture of digitalis.*

28*th.*—Urine 4 lbs. in the 24 hours. Had a convulsive fit in bath.

November 3.—Rubbing cardiac sound limited to-day to systole; countenance flushed. Pulse 86; urine 3 lbs. density 1·014, having few saline particles, but only some casts; urine highly albuminous. *Two grains and a-half sabacetate of lead thrice a-day.*

4*th.*—Urine 3 lbs. albuminous, exhibiting numerous oil globules, cells, and some casts.

5*th.*—Urine to-day much the same; under the microscope the blood is seen gathered into uniform layers, deficient in colour; few rouleaux.

6*th.*—Corpuscles small, a good deal isolated, but rouleaux form more distinct.

7*th.*—Passed 4 lbs. of urine of spec. grav. 1·014, containing much albumen, and numerous casts.

8*th.*—Frequent vomiting; bowels regular.

Dec. 9.—Partial return of anasarca, with some numbness of lower extremities. Bowels slow, pulse 60. Breath and saliva afford no traces of the presence of ammonia.

17*th December.*—He is dismissed by desire, with no improvement. He is reported to have died suddenly ten days afterwards. Nichol's case has been given here because he had been fully experimented upon, with a view to discover an excess of ammonia in the expired air. Although there was not decided uraemic poisoning in his case while under examination, yet he had what

I considered to be uraemic headaches and fits, and I supposed that if carbonate of ammonia existed so largely in the true uraemic poisoning, it was but fair to expect an abnormal increase in this case. Yet after having caused him to breathe for several minutes, through water acidulated with sulphuric acid, several times a-day for a couple of weeks, no excess of ammonia could be detected by the usual methods, but Marchand's mode of applying the colourless hæmatoxylin was not had recourse to. Since the appearance of Frerich's paper, this is the only case of albuminuria which I have had an opportunity of examining, my term of attendance in the wards having expired soon after. Dr. Frerich, professor of Medicine at Kiel, states as his opinion, that uraemic intoxication, or poisoning, is caused by the decomposition of accumulated urea in the blood, and the production of carbonate of ammonia, as may be seen in the Review of his Paper in the 18th Number (April, 1852,) of the *Medico-Chirurgical Review.*

Zimmerman in an article in the January Number, 1853, of the same Review, is inclined to dispute this, not from any positive experiments of his own, but from Frerich's own contradictory statements. *Deutsche Klinik*, No. 37.

Several of the patients have been sparingly bled from time to time, not so much in the way of treatment (although they seem to think themselves the better of it) as to test the spec. grav. of the blood and its serum. It is extraordinary to notice the attenuating effect of this disease upon the blood. I cannot refrain from alluding to the very beautiful theory of Dr. Rees as to the manner in which this is effected.

The facts (Dr. Rees says) on which this theory is founded are as follows:—

1. "In health, the blood corpuscle is supplied with nourishment in the chyle.

2. "The chyle is of lower spec. grav. than the liquor sanguinis in which the corpuscles float.

3. "In the early stages of the morbus Brightii, the spec. grav. of the liquor sanguinis is greatly diminished. Now, in red blood of every kind, the corpuscles float in a liquor which is of the same density as the fluid contained within them. This is a necessary result of the physical law of endosmosis, because the blood corpuscle is a membranous vesicle, and if its contained liquor were by any chance to become for a moment either specifically lighter or heavier, than the fluid in which the vesicle floats, endosmodic currents would immediately be set in motion through the membrane, and the result of such changes would be the eventual acquirement of a condition of stasis, in which the fluid within and the fluid without the corpuscle, would be found of the same specific gravity. Now, the liquor sanguinis, in which the corpuscles float, is of much higher specific gravity than the

chyle, and when therefore that fluid comes in contact with the blood corpuscles as it enters into the venous system, it meets with these vesicles, which contain a fluid of a higher specific gravity than itself, and consequently a considerable quantity of this lighter fluid passes through the coats of the vesicle. This change, which appears necessary to the maintenance of the healthy condition of the blood corpuscle, (inasmuch as it is the manner in which iron enters to assist in the formation of hæmatosin,) cannot occur to its normal extent if the specific gravity of the liquor sanguinis be lessened so as to approach that of the chyle, because in such case there will be very little ferruginous matter passing into the corpuscle, and scarcely any at all if the liquor sanguinis is so degenerated as to be below the density of the chyle; for we must remember, that though in endosmosis there is always a reciprocal change, which causes the fluids placed on either side of the membrane to pass simultaneously, still the heavier passes to the lighter in a much less proportion. This is easily seen under the microscope. Thus when a fluid of 1·010 is added to blood, the corpuscles become swollen, whereas the same solution strengthened to 1·060, or 1·070, rapidly collapses them. It is thus, then, to the fact of endosmodic change not occurring to its normal extent, that, I believe, we may very fairly attribute the deficiency of red corpuscles in albuminuria, these important bodies not receiving their nutrition to the proper extent."

Ozone, which is declared to be a powerfully oxidizing and consuming agent, and considered to be electrified or galvanized oxygen, has been recently recommended for consuming the accumulated urea, and eliminating it from the blood, but it has been well remarked, that if that morbid condition depends upon organic lesion of the kidney, as it usually does, little, or only temporary benefit, could be derived from it or any other remedy.

IX. *Case of Acute Chorea.* By William Weir, M.D., Fellow of the Faculty of Physicians and Surgeons, Physician to the Royal Infirmary, &c. &c.

Jessie Mann, aged 17, servant, was admitted into the Royal Infirmary under my care, on 13th December, 1852. On admission, patient is found somewhat incoherent, and little can be gathered from her own statements, but it appears, from what can be ascertained, that about a week or ten days ago, without any assignable cause, she was seized with a rigor, followed by dull aching pains throughout the body. She now complains of pain of head. The countenance has a vacant expression, pupils natural. She seems to have little power over the wrist joints, and has constant involuntary movements of the muscles of forearm and leg, and slight convulsive jerking motions of other muscles of the body. She has no cough, and makes no other complaint. She has an awkward, bashful appearance, and answers questions with some hesitation. Pulse 96, strong. Heart's action also unusually strong, but no abnormal sounds can be detected. Tongue furred at the back, with red tip. Bowels regular. *Salts and Tartar Emetic.*

14th.—Medicine produced several stools, but no sickness or vomiting. Irregular muscular movements, chiefly confined to hands and feet, still continue. Has a vacant countenance, and is slightly incoherent: does not answer questions readily. *Blister to nape of neck. Colocynth pill every night.*

15th.—One stool from pill; irregular muscular movements rather diminished. It appears that she had been nearly insensible for two days previous to admission, but complaining only of pains in limbs. Had been treated for rheumatism at home. *Head to be shaved.*

During the 17*th* and 18*th* had every appearance of improvement. She became much more coherent and rational, answered questions more distinctly, and said she was better; and the irregular movements were for a time much diminished. This apparent improvement was but of short duration.

20th.—Irregular muscular movements are found much increased, affecting particularly the upper and lower extremities, which are thrown about and contorted in every possible direction. Besides those of the extremities, the muscles of the back are brought into violent action, so that when an attempt is made to move her, the contortions become more violent, and she is thrown into a state similar to opisthotonos. The muscles of the face are also in violent action, and during a severe paroxysm she grinds her teeth, and seems to suffer acutely. Even in this state she appears sensible, and can answer questions, although indistinctly. Pupils natural, but eyes suffused, and face generally flushed, from the great violence of the muscular movements. Pulse at wrist cannot be ascertained. Bowels have been freely opened by an enema. *Draught with* 5 *drops hydrocyanic acid, and* 25 *of solution of muriate of morphia. One drachm ammoniated tincture of valerian, every third hour.*

5 *o'Clock* P.M.—Draught has not had the least effect in restraining the violent movements. She was confined by means of a straight-jacket for about half-an-hour, but the determination to the head seemed thereby increased, and it was accordingly removed.

8 *o'Clock* P.M.—No change in symptoms; if anything, more severe; all the muscles of the body, except those of abdomen, seem to be in violent action. As none of the means hitherto employed had produced any effect in restraining the violent muscular movements, it was thought that if a state of gre

nausea and depression were brought on, this might be accomplished. Accordingly, an enema composed of one grain of tartrate of antimony, and half an ounce Epsom salts, was ordered. This was retained for some time, but produced no nausea or abatement of the symptoms. Bowels were freely moved, evacuations being of very dark feculent matter.

At 1 *o'Clock* A.M. of the 21*st*, after the free operation of the enema, she got 30 drops of solution of muriate of morphia, with 20 drops of antimonial wine. This had no effect in quieting the movements, or even in causing drowsiness. Three hours afterwards she was ordered to have 20 drops of antimonial wine every hour until nausea was induced.

21*st*, 9 *o'Clock* A.M.—Has had the antimonial wine three or four times, and is at present in a tranquil sleep, without the slightest muscular movement. Pulse 100. Previous to falling asleep, she had been for 36 hours in a state of almost perpetual movement.

2 *o'Clock* P.M. *Visit.*—On rousing from sleep, the movements returned as violently as before. They were restrained for a short time at two different periods by the exhibition of chloroform. Has had several evacuations from the bowels, but no vomiting. *Half an ounce castor oil, with 2 drops croton oil, and 3 grains calomel—a tea-spoonful of this mixture every hour.*

One dose of the medicine was given about half-past 3 P.M. and another an hour after, which produced two copious evacuations, after which, about 5 P.M. the exhibition of chloroform was recommenced, and she was kept completely under its influence for about 4 hours. At half-past 8, or 9, the chloroform was omitted, and although she had been perfectly quiet during the whole time she was under its influence, as soon as the effect wore off, the muscular movements became more constant and more violent than before, it now requiring four persons to restrain her. She could still be roused, and understood questions put to her, and sometimes made efforts to answer, which ended in loud screams. At this time she had another dose of the mixture, which produced several copious evacuations; and at 10 P.M. continuing as bad as formerly, and the effect of the chloroform having entirely gone off, she got a draught with 40 drops laudanum, and 20 drops antimonial wine, which produced a slight degree of drowsiness, but the violent movements returned, and she gradually sunk exhausted, and died at 6 A.M. on 22*d*.

The inspection was very carefully performed by Dr. Aitken, and the morbid appearances discovered in the brain are minutely detailed by him in the next article, p. 92, of this Number.

For several of the above reports I am indebted to my clinical clerk, Mr. Bruce Goff, who paid constant and minute attention to the case during its whole progress.

Remarks.—This was altogether a very singular and interesting case. In addition to the history given above from the journal of the ward, and which was drawn up by my clerk, Mr. Goff, in a manner as full as could be obtained at the time, I ascertained from a private source several particulars connected with the commencement of the disease, and also with regard to the previous history and state of health of the young woman. It appears that she had been only a few weeks in Glasgow, and though stated to have been previously healthy, she exhibited, from her first residence in the family where she was a servant, various unusual symptoms of disease, both mental and bodily. Strangeness of manner, slight incoherency, irritability and waywardness of temper were observed from the first, and what the family called insensibility, which appears to have been inattention to her house duties. She was also observed to have little control over her limbs, frequently complaining of weariness and pains in the lower extremities. She was attended by a medical man for a week or two before coming to the hospital, and the disease then appeared to be rheumatism, affecting the wrist, ankle, and knee joints. The irregular muscular movements, however, characteristic of chorea, had commenced before she was removed to the Infirmary, and although these did not appear until after the rheumatic pains were much relieved, or nearly gone, the case was stated, by the medical attendant of the family, to be then one of chorea, or St. Vitus' dance. There does not appear to have been anything like coma, or complete unconsciousness, at any time, but it was stated that there had been delirium, although probably this was only the incoherency or the screaming, similar to what she had the last two days of her life. Nothing is said in the history respecting the menstrual discharge, but I learned from her mistress that it had been established, and that she was unwell once after coming to Glasgow.

With regard to any immediate or exciting cause for her disease, it may be stated that she had been much exposed to cold when travelling upon the railway, about a month before her attack of rheumatism. The cold had affected her so severely, that her lower extremities became quite benumbed and powerless, so that she required assistance in being removed from one railway carriage to another during her journey. To this exposure she attributed her attack of rheumatism. I may also state, that she was brought up from infancy in a benevolent institution, her parents having died when she was young. They were both, I believe, intemperate, particularly the father. She herself was considered by the family where she resided a very well behaved young woman.

I have called this case *chorea*, as it certainly exhibited all the symptoms described by authors as constituting that disease. The irregular convulsive twitchings of the voluntary muscles, producing the trembling, starting, jumping movements, first of the extremities, then extending to the head, and also to the trunk of the body, were very well marked, and gradually increased in intensity from the day of admission till her death. Towards the termination of the case, these movements were continuous for many hours in succession, and could not be restrained by the exertions of several persons. They consisted in rolling motions of the head from side to side, movements of the hands and arms in all directions, and when the muscles of the trunk were also brought into play, she rolled with great violence to the side of the bed, and would have fallen over had she not been prevented. Various other irregular muscular movements were present, which it is not easy to describe. These movements, from the constant and long continued friction, abraded the integuments about the head and neck, and produced much redness of the countenance, and increased impetus of the general circulation. I did not ascertain that there was any regularity in the movements, or that they ceased and commenced again after a certain time of intermission, as appears to have occurred in the remarkable cases related by Dr. Robert Watt, and Mr. Kinder Wood.* The movements never ceased after the disease was fairly formed, except while she was under the influence of chloroform, and once during a short period after the exhibition of antimonial wine and solution of morphia.

I have, moreover, denominated this a case of *acute* chorea. It certainly presented appearances and symptoms, very different from those present in the more common cases of chorea, frequently met with in young girls and boys at and below puberty. The symptoms were no doubt slight at the commencement, but they soon became very severe, indicating some affection of the brain as their cause; and the disease ran its course with great rapidity, terminating fatally in about ten days from the first distinct appearance of the convulsive movements. The many premonitory symptoms which have been alluded to, also pointed to the brain as the seat of the affection, and accordingly the treatment adopted was founded upon the opinion, that she laboured under an acute affection of the encephalon. During the last two days while the disease was at its height, free purging, counter irritation to the nape of the neck, and nauseating doses of tartrate of antimony were had recourse to, as sedulously as the violence of the symptoms would permit. General blood letting might perhaps have been adopted, but local bleeding, or indeed any application to the head was not practicable, in consequence of the incessant and severe movements which were present. Large doses of opium, which are by some thought useful in the more common cases of chorea, were here quite inadmissible; nor indeed were any of the various remedies recommended in the disease in its chronic form applicable to the present case. The appearances discovered on inspection, bear out the correctness of the application of "acute" to this case.

---

* Medico-Chirurgical Transactions, vol. 5, p. 1, and vol. 7, p. 264.

I have met with no case exactly similar to the one now detailed. Almost all the instances of chorea related by various authors, amounting to a very great number, appear to have been long continued chronic affections, without any symptoms of excitement, and in which a few only of the voluntary muscles, generally those of the extremities, were implicated. The disease usually continued for several weeks at least, sometimes much longer; and for the most part purgatives, tonics, and anti-spasmodics were the medicines employed. This treatment appears to have been very generally successful in curing the disease in a longer or shorter time, and among modern authors I can find few fatal cases on record. Indeed, some would appear to consider chorea as never terminating fatally. The writer of the article upon the disease in the *Cyclopædia of Practical Medicine*, in commenting upon some cases related by M. Serres, in which various morbid appearances were discovered in the brain, says:—"We would, however, express a doubt whether M. Serres's cases of chorea were of the ordinary species; and we think that *the simple fact of their having proved fatal*, in some measure justifies us in this hesitation." Fatal cases, however, are upon record, as fully alluded to in Dr. Aitken's paper, and it is worthy of remark, that all these did present symptoms more or less different from those observed, in the more common cases of the disease denominated *chorea*, and such symptoms were all indicative of an affection of the brain, as in the girl Mann. The disease, even in its usual form, has sometimes passed into hemiplegia, or epilepsy, and it is well known that imbeciles are often affected with chorea, as well as other nervous disorders. The mental faculties are probably more or less affected in all cases where the irregular movements are of long continuance. I may add, that Dr. Elliotson alludes to a case which he had seen, of a young woman afflicted with chorea, in whom the disease terminated in apoplexy, and proved fatal.* All these facts, and many more which might be added, undoubtedly point to the brain and nervous system as the seat of this affection.

---

* Medico-Chirurgical Transactions, vol. 13, p. 252.

X. *Contributions to Pathology.* By WILLIAM AITKEN, M.D., Demonstrator of Anatomy in the University of Glasgow.

MORBID APPEARANCES IN A CASE OF CHOREA — THE CONNEXION OF THIS DISEASE WITH IMBECILITY AND AN ALTERATION IN THE SUBSTANCE OF THE BRAIN.

UNDER the above title I propose to publish in this JOURNAL the history of cases and dissections which may from time to time come under my notice, and which illustrate some of those principles of Pathology which have been established by anatomical and physiological study, or indicate methods of research, by which the existence of organic change may be demonstrated in cases hitherto regarded as entirely of a functional character.

Convulsive diseases of the nervous system have hitherto, for the most part, baffled the attempts of the morbid anatomist to associate them with structural changes of a characteristic or constant kind; and the accounts of the pathological observations which have been made in these diseases, though very numerous, have not yet assumed the form of a pathological law, by which the occurrence of their symptoms may be explained. Such diseases as tetanus, hydrophobia, epilepsy, and chorea, particularly illustrate these statements.

It is obvious that the pathology of such diseases must be mainly grounded on the ascertained functions of the nervous system; and we may with confidence recommend the remarks made by Dr. R. B. Todd in the Lumleian Lectures for 1849,* as clearly showing the direction in which observation ought to be extended in such diseases, with the view of confirming or modifying opinions regarding their pathology.

As a comparison of the specific gravity of the central parts of the opposite hemispheres of the brain, in the case of chorea described in the preceding article, has furnished some unexpected results, I have deemed them worthy of being recorded; and it is hoped, that when its history, as detailed by Dr. Weir, is connected with some collateral details in the pathology of similar cases, and with the recently published and valuable records of the specific gravity of the cerebral substance in health and disease, some additional interest may be attached to a case, which otherwise is in no respect different from many which are already familiar to the profession.

As more fully stated in Dr. Weir's history, this case occurred in a female, aged 17 years, admitted to one of the wards in the Glasgow Royal Infirmary, 13th December, 1852, with the characteristic symptoms of chorea in its most aggravated and acute form. Although reported to have been previously healthy, she exhibited to the family with whom she lived as a servant, various unusual symptoms of disease, both mental and bodily. She was observed to have little control over her limbs, and frequently complained of weariness and pain in the lower extremities. From her infancy she had been brought up in a benevolent institution, her parents, who were both intemperate, and particularly the father, having died when she was young. Her disease terminated fatally on the 22d December, in about ten days from the first appearance of the acute symptoms.

---

* London Medical Gazette, vol. xxviii.

Examination of the body 20 hours after death.—The cavity of the cranium in this case was the part to which our attention was more immediately directed, and it is more especially to the condition of the brain substance, that I mean to call attention; premising that no lesions of any moment existed in any other internal organ, and that the external surface of the body presented appearances of severe bruises and abrasions of the scarf skin, resulting from the injuries received during the more violent paroxysms of the convulsive movements.

The pupils were unequally dilated, the left to about twice the diameter of the right, which measured about a tenth of an inch. Before removing the brain, it was observed that the contour of the left cerebral hemisphere projected considerably above that of the right side; the superficial vascularity was also greater on the left side. The brain weighed 46 ounces avoirdupois. A horizontal section through the cerebrum showed that its white substance was comparatively bloodless, while the grey matter was unusually distinct, from its ruddy appearance. The ventricles contained no fluid, and the sub-arachnoid spaces were also unusually dry. The nerves at the base of the brain were firm and natural in appearance. The arteries of the circle of Willis enclosed fibrinous coagula.

In the absence of any marked organic disease in this case, it appeared to me desirable to have recourse to that kind of investigation which in diseased conditions of the liver, and alterations in the urine and kidney, had yielded such varied and remarkable results, more especially when studied along with the microscopic appearances of the objects of examination; and directing my enquiries to the central parts of the brain, as recommended by Dr. Todd, (*loc. cit.*) an accurate examination of their specific gravity was made.

The specific gravity of the central masses was determined in two ways, 1st, by weighing the parts in air and then in water; and, 2d, by the gravimeter, employing in the latter method a strong solution of Epsom salts, which was gradually reduced by the addition of water, to the density of the portion of brain floated in it. In consequence of the uncertainty of the results obtained by suspending such a soft material as the brain both in air and in water, the observations from the gravimeter have been retained in preference to those made by the hydrostatic method. The following results were thus obtained:—The specific gravity of the corpora striata, and thalami optici was different on the two sides of the brain; those on the right side were of the specific gravity of 1·025, those on the left side of 1·031, and this difference appeared from the hydrostatic experiments as well as from those made with the gravimeter, confirming in some measure the accuracy of the general result.

The vascularity also of these central parts of the brain, when compared with the grey matter of the spinal cord, which was healthy, was so well marked, as to leave no doubt of its abnormal increase.

Microscopic examination confirmed the existence of increased vascularity, for numerous capillary vessels, in unusual abundance, existed in every section examined. Some of these were irregularly dilated, as in a varicose condition, and all were filled to a greater or less extent with the red corpuscles of the blood. The amount of granular substance in these parts of the brain on both sides, appeared to be greater in proportion to the fibrous substance, than in the same parts of healthy brain with which I compared them.

When removing the dura mater, it was observed to be more adherent than usual to the surface of the convolutions, on each side of the superior longitudinal sinus, by firm vascular connexions with the pia mater and Glandulæ Pacchionii. The sinus was turgid with blood and a decolorized fibrinous clot which filled its cavity. The veins on the surface of the convolutions were also much congested and turgid with blood, while the whole surface of the pia mater presented a bright rosy colour, from the increase in the number and size of the vessels visible to the naked eye.

The following are the Measurements of the Head, Cranium, and Brain:—

(*a*) Horizontal periphery of the head,...............	20·5	inches.
(*b*) Horizontal periphery of the denuded cranium,	19·25	—
(*c*) Horizontal periphery of brain *in situ*, and enclosed in dura mater,.........	18	—
(*d*) Greatest antero-posterior diameter of skull, ...	6·75	—
(*e*) Greatest transverse diameter,.....................	5·25	—

Nothing abnormal was observed in the nerve substance of the cord. Its sheath enclosed fluid in the usual quantity. All other internal organs healthy.

Remarks.—The morbid appearances of the body which have been found in cases of chorea, have not as yet thrown much light on its pathology. Sydenham, Cullen, Rostan, Bright, Stoll, Pinel, and others, who have had frequent opportunities of examining cases of this disease, failed to detect any other morbid appearances than those which were commonly seen in other affections of the brain and spinal cord. Accordingly, by one class of pathologists, chorea has been regarded as entirely a functional disorder, independent of organic change; and by another class it has been considered as associated with some other diseases, whose pathology is better known, either as a concomitant feature, or as a necessary consequence of their previous existence; such, for instance, as rheumatism and diseases of the heart.

Much evidence has been brought forward in favour of the humoral or rheumatic character of the disorder. Dr. Copland (*London Medical Repository*, vol. xv.) has the merit of having been the first to indicate the complication of chorea with that class of diseases; and his views have been subsequently confirmed by Drs. Prichard and Roeser, and more recently by the elaborate researches of Dr. Begbie* and Dr. Seé.† Numerous instances have also been adduced by Andral, Bouillaud, Bright, Mackintosh, Watson, and others, in which diseased conditions of the heart and pericardium have been attended with, or have given rise to, spasmodic diseases of the nature of chorea, paralysis, mania, or dementia, and the evidence of these writers is amply sufficient to prove, that a considerable number of individuals affected with chorea, have suffered from cardiac or synovial rheumatism. But it is unquestionable that all have not so suffered, and indeed the history of the majority of the cases clearly shows that chorea has a more intimate connexion with mental disease, such as imbecility, or even insanity, than with perhaps any other morbid state.

The history of this case of chorea in the article immediately preceding, and the examination after death, as now described, present the following points of special interest in its pathology:—

1. The condition of slight mental imbecility which characterized the patient during the whole of life, and which appeared to be congenital, and probably hereditary.

2. The altered condition of the nervous substance, not indicated by any very obvious deviation from the healthy structure, but sufficiently manifest by various observations made upon the brain.

These observations are (a) *a difference in the comparative bulk of the two hemispheres of the brain;* (b) *a marked difference in specific gravity of the corpora striata and thalami optici of the opposite sides;* (c) *an increased vascular condition of the grey matter, and anæmic condition of the white.*

The previous state of our knowledge of the nervous diseases now under consideration, has inclined pathologists to arrange them into three sets, namely:—(1,) Those in which anatomical lesions of the nervous substance have been ascertained to exist; (2,) Those in which no organic change of the nervous structures has yet been detected; (3,) Those chiefly of a mental kind, in some of which organic lesions have been observed, in others not.

---

* Edinburgh Monthly Journal of Medical Science, 1847.

† Memoires de l'Acad. Nationale de Medicine, vol. xv. page 373, et seq.

But a more complete examination by extended methods of research, may ultimately lead to considerable modifications of an arrangement which seems in a great measure founded on imperfect knowledge.

There is perhaps no class of diseases, the history of which abounds with more conclusive evidence of the advantages to be gained, by extended and varied instruments of pathological research, than affections of the nervous system. If we compare the state of our knowledge of these diseases, with that possessed by physicians a hundred years ago, it will appear that by improved methods of research and examination, diseases which were before unknown, or classified amongst those of the second and third order referred to above, come to find a place in the first, so as to increase the number of those in which an appreciable change of texture is apparent after death. It is a commonly received opinion, that functional derangement may exist without organic change; but when functional disorder is prolonged, as in the case of the heart, the structure of its substance becomes in some part or other organically changed. But although, in many instances, our means of observation are not as yet such as make it apparent whether a change of an organic kind, hitherto incapable of detection, may or may not precede a functional change, we are not, therefore, warranted in assuming that in cases of functional disturbance, organic change is always of secondary origin.

It is by no means intended here to assert that all diseases are essentially the result of structural alterations. But although in many instances these may be of a kind inappreciable by our present means of observation; and although hysteria, chorea, epilepsy, and insanity, for the most part leave behind them no pathological change of a constant or characteristic nature, yet we are still so little conversant with the changes to which the organs involved are liable, that it is reasonable to believe that the delicate texture of the nervous system may be organically changed in some parts of its substance, although it may have hitherto escaped observation. And it may further be remarked, that the congenital nature of some of these affections, and the permanence of the functional derangement, add probability to the view of a coincident organic lesion. This remark applies particularly to mental diseases; and in reference to them it may further be stated, that although marked organic changes often appear to be absent, yet even in the obscurer cases a morbid condition of the brain may be indicated by various observations of the following kind: namely, change of colour of the nervous texture; altered consistence; abnormal vascularity; softening; increase or deficiency of size, or of specific gravity; congenital malformation. And although, also, it may be urged, that such morbid conditions of the grey matter of the brain, as well as other changes of the fibrous substance, are not significant of any fixed or particular form of mental or nervous derangement, yet it has now been clearly shown that every variety of lesion has been associated with one distinct functional change, viz. *insanity.** Our knowledge of the physiology of the brain is not yet sufficiently far advanced, to state with certainty the varied conditions under which the different parts of the encephalon may be modified in their operations, by any alteration of structure in other parts of the nervous centres, more especially when such alterations are of congenital origin, and of gradual development. The compensating and vicarious powers of different organs and textures of the body, are also now so fully recognized, that every allowance must be made for the natural performance of function, although a part of the organ may be in a condition incapable of healthy action; and while the great variety of morbid changes which have been observed in hysteria, chorea, epilepsy, and cretinism might leave it doubtful whether any are constant, the congenital nature of these affections, along with the gradual and increasing development of the morbid symptoms, under various exciting causes, give great probability to the view that alterations of structure originally existing, have only been increased and made more manifest by various excitants of the nervous system.

The observations of Drs. Howe and Kneeland in the *American Journal of Medical Science*, contain abundant evidence confirmatory of these views, and bearing more immediately on the following points:—

1. The hereditary transmission of insanity.
2. The birth of imbecile children from imbecile parents, and from parents in whom the size of the brain is deficient.
3. The prevalence of hysteria, chorea, and epilepsy among imbeciles, and among children born of imbecile or dissipated parents.
4. The general coincidence of organic change of the brain and cranium with the affections of idiotcy and cretinism.

The history of this case of chorea, as given by Dr. Weir, shows that the treatment to which the patient had been subjected, particularly in early life, was calculated to induce disturbance of the nervous system, and to foster a predisposition to imbecility, while the following conclusions, derived from a comparison of some of the morbid conditions with well ascertained facts, tend to connect the organic changes with an imperfect condition of the functions of the brain.

The weight of the brain (46 ounces avoir.) is above the average weight of the female brain, as given by Dr. Reid, at the age of 17 years. The average circumference of the female head is ascertained to be 21·5 inches, and while the greatest circumference obtained from idiotic crania gives only 20·7 inches, it is evident that when we compare the size (46 ounces) with the dimensions given in the case before us, and also take into account the difference of specific gravity of the central parts of the brain on the two sides, it shows a disproportion between the weight of the brain and the capacity of the cranium—an observation which coincides with measurements made in a certain class of idiots; and if to the above mentioned changes of the specific gravity we add the increase of vascularity, we see more and more reason to conclude that some physical change has taken place in the texture of the brain, and more especially in the central parts.

---

* Hitchman, Pathology of Insanity. Psychological Journal, vol. iii. p. 519.

A change of a morbid kind may exist in a single part, and may therefore be readily appreciated, or it may exist more generally diffused throughout the whole mass, and be only capable of detection by observation on large quantities. This is more particularly the case with vascular congestion of the brain, and more widely diffused changes in the vesicular elements of the nervous system. Of all the morbid changes associated with insanity, epilepsy, and chorea, there are none which occur with greater frequency than congestions in the nervous centres, either of a local or of a general character; while it is also the opinion of the most experienced physiologists and pathologists, that congestions of a local kind may occur during life, without leaving any marked evidence after death of their previous existence. Other changes are of frequent occurrence, giving rise to symptoms similar in kind, although the morbid conditions of the textures may be different; and Dr. Bennett has the merit of clearly pointing out "that death may be occasioned by structural changes in the brain, which are altogether imperceptible to ordinary vision."* We must not, therefore, at once conclude that organic lesions are altogether absent because appearances do not indicate any of those which have hitherto been familiar to us. Other methods of research may be in store, and among them observations to determine the specific gravity of parts not yet examined.

While anatomical and physiological observations assign to cerebral congestion a very prominent place in the pathology of insanity and convulsive disease, an increase or diminution of the specific gravity of the brain, is a no less certain index of some change having occurred in its structural elements.

The absolute weight and the specific gravity of the brain have recently been the subject of observation in Germany, France, and Britain; and although some discrepancy is evident in the obtained results, yet they all tend to show that any considerable change in the specific gravity of the cerebral substance is incompatible with a healthy exercise of the nervous functions.

Meckel affirmed that the brain of the insane was lighter than the brain of persons of sound mind; an observation since confirmed, and recently elucidated by M. Parchappe, in a Memoir presented to the Academy of Sciences, where he shows the gradual decrease of the weight of the brain, in proportion to the successive degrees of loss of the intellect.

---

* Inflammation of the Nervous Centres, 1849.

MM. Leuret and Mitive give the mean specific gravity of the brain of an intelligent individual as 1·028, but this is a statement which recent observations have shown to be much below the average; a density, in fact, more frequently associated with an impaired mental capacity.

To Dr. John Charles Bucknill, Physician to the Devon County Lunatic Asylum, we are indebted for the first most extended account of the specific gravity of the cerebral substance, and its relation to disease, more especially to atrophy and paralysis. The following are the general results of his observations as detailed in the *Lancet*, 25th December, 1852, and for the most part made upon patients labouring under different forms of mental disease:—

1. Average specific gravity of healthy brain, 1·036.

2. In paralysis of a chronic character complicated with insanity, the specific gravity ranged between 1·036 to 1·046.

3. In some acute cases the specific gravity was as high as 1·052.

4. In paralysis terminating by coma, 1·040.

5. In paralysis terminating by syncope, or asthenia, 1·036 to 1·039.

6. In general terms a higher specific gravity was found when life terminated by coma, or asphyxia, than when it ended by syncope, or asthenia.

In addition to these observations, an able and elaborate paper has since been published by Dr. Shankey, in the *British and Foreign Medico-Chirurgical Review*, showing the relative specific gravity of the grey and white matter of the brain, and of so extensive a nature, as to furnish very copious data for comparing morbid states with the standard of health.

The following are the general results of his researches, as given in the *British and Foreign Medico-Chirurgical Review*, for January, 1853, p. 257:—

"1. Mean specific gravity of the grey substance of the brain, in either sex, 1·034.

"2. In the earlier and later periods of life the specific gravity of the grey matter is below the mean.

"3. The cerebral substance acquires its greatest density in males between the ages of fifteen and thirty, and in females between the ages of twenty and thirty.

"4. The density diminishes with prolonged illness.

"5. It decreases with lapse of time after death in the ratio of ·001 for every 24 hours.

"6. A density of .006 above the average, indicates the existence of the following conditions during life:—Acute cerebral symptoms, or chronic disease with no cerebral symptoms, or only slight delirium; also with conditions associated with hyperæmia.

"7. Mean specific gravity of white matter 1·041."

The observations referred to above, appear to have been made upon the brain as a whole, and as the observations of Dr. Shankey show that no constant relation exists between the absolute weight of the brain and its specific gravity, it is necessary that we examine the brain as we do its anatomy, namely, by comparative observations on its central parts or ganglia. As I was not aware of the existence of any published accounts of the specific gravity of the brain substance, at the time when the case of chorea now detailed came to be the subject of *post mortem* investigation, and as the observations then made showed such a striking difference on comparing the specific gravity of the central masses of the opposite sides of the brain, I thought it right at the time to institute comparative experiments upon the brains of a number of individuals in the Royal Infirmary of this city. The observations I have made are of a similar kind to those recorded by Drs. Bucknill and Shankey; but while my observations have not so directly in view, the determination of the specific gravity of the grey and white substance throughout the whole brain, they tended rather to detect any difference of specific gravity, which may exist in individual portions of the cerebral substance, and which have been styled by some the *central ganglia*, and which are now generally regarded as parts more immediately related to the combined exercise of sensory and motor functions.

The following is a statement of the results of my experiments on the specific gravity of the central masses of the encephalon:—

Age.		Disease at Death.	Weight of Encephalon in ounces avoir.	Cubic capacity of Encephalon in inches.	Specific gravity of Cerebrum.	Specific gravity of central parts.		Specific gravity of Cerebellum.
Male.	Female.					Corp: Stri: and Thal: opt: rt. side.	Corp: Stri: and Thal: opt: left side.	
—	17	Chorea, ...	46	—	—	1·025	1·031	—
—	30	Morbs. cox. fatty liver,...	50·25	75·29132	1·033	1·045	1·045	—
26	—	Typhus, (21st day,)	54·25	84·15724	1·046	1·046	1·047	1·049
32	—	Tumour of brain,...........	—	80·	1·035	—	—	1·043
—	36	Dysentery, ...	—	—	1·040	—	—	—
17	—	Empyema,......................	52	88·	1·038	1·043	1·042	1·041
12	—	Phlebitic deposits,.........	43·12	—	1·030	1·040	1·041	1·038
47	—	Tetanus, ...	46	75·	—	1·040	1·040	1·046

The observations in the foregoing table were made upon subjects within forty-eight hours after death, and the specific gravity taken by the gravimeter in a solution of Epsom salts, made of such density as to float the portion of brain.

Of the six cases observed, four of them indicated a difference between the central masses of the opposite sides. The case of chorea gave the greatest, while only one of the others exceeded a difference of one degree upon the gravimeter. It was a case of death from typhus fever.

In the case of chorea now detailed, we have little to indicate the real nature of the morbid change that has taken place. A diminution of density to a great extent, and that unequally upon the opposite sides of the brain, of itself indicates some abnormal condition of the nerve substance, and the microscopic appearances clearly indicated an increased vascularity of the grey substance, and an amount of molecular (exudation or degeneration?) matter, which hardly left any vesicular nerve substance to be seen amongst the fine nerve fibres of the sections examined.

The morbid conditions which this case illustrates, are also of some importance in a physiological point of view, inasmuch as they are not at variance with the views, expressed by Dr. R. B. Todd and Dr. Carpenter, and now very generally received, regarding the functions of the central ganglia of the brain, namely, that these centres, consisting of the *corpora striata, thalami optici, tubercula quadrigemina, and the large mass of vesicular nervous matter connected with the convolutions of the hemispheres, and the substance of the cerebellum,* while they are the immediate seat of the origins of nerves, may be looked upon as parts where some changes in connexion with the nerves are constantly going on, of a kind such that a result is expressed through "volition, perception, or emotion, or the balancing and co-ordinating of movements."

The evidence from this case, while it is not at variance, therefore, with opinions of a theoretical nature which are entertained regarding functions, at the same time coincides in some measure with the results of those experiments and observations in morbid anatomy, which prove that injury to the optic thalami is productive of considerable disturbance to the movements of the body. In conclusion, therefore, this case seems to establish, for itself at least, *the existence of a primary morbid change having taken place in the central ganglia of the brain;* and although there were no symptoms of a hemiplegic character recorded during life, yet the condition of the pupils may be considered as indicating a cerebral origin to the disease, and when we also consider the extensive connexions and relations of these central parts, above, below, and on every side, an abnormal condition, such as has been described, may be fully sufficient to account for the characteristic phenomena of chorea, as well as the imbecile condition of the individual which her history records.

While the observations made upon this case are to be regarded as a contribution towards the pathology of chorea, the accompanying remarks have been made with the purpose of bringing more prominently into view an instrument of pathological research, whose importance has not yet been appreciated; and the observations cannot fail to show, that a determination of specific gravity points out physical conditions of texture, which are of the utmost importance to pathology. The microscope has been unjustly and unnecessarily burdened with labour, and has been equally unjustly blamed and brought into unmerited discredit when it has failed to elucidate the nature or even presence of a morbid state, the existence of which could not be doubted, but which the sense of sight could not appreciate, even when presented in small quantities greatly magnified. In such instances the microscope has been applied to uses, which it is not the nature or province of the instrument to detect. The gravimeter or hydrostatic balance, the microscope, the stethoscope, the pleximeter, are merely instruments of pathological research, each one adapted for the determination of particular classes of facts, and can only elucidate disease when they are brought to bear upon the physical properties of the textures, organs, and regions, the nature of which they are able to appreciate; and it is only from their *combined and appropriate* use that the science of pathology will be advanced.

XII.—*Case of Bite of a Young Woman by a large Cobra de Capello.* By Wm. Chalmers, M.D., lately Surgeon H.E.I.C. service, Bengal.

On 25th June, 1819, at 11 p.m. I heard from the outside of my house, at Barrackpore, near Calcutta, a loud call for my immediate attendance. It proved to be from Colonel, afterwards General Sir Wm. Lumley, whom I found with a lanthorn in his hand, entreating me for God's sake to come with him at once, as his *mehturanee* (female sweeper) had been bitten by a cobra de capello. I took in my hand a phial of solution of ammonia, of the usual strength, a case of scalpels, and a large sized elastic gum male catheter. On arriving at the hut occupied by the poor woman and her husband, I found her stretched outside on the ground, her head resting on her husband's knee. Her body was cold and collapsed; there was neither breathing nor pulse; her eyes were wide open, and insensible to light; the mouth was also wide open; tongue cold; in fact life was, to all appearance, extinct. How long she had lain in this position could not be ascertained; her husband conjectured an hour at least. On the back of the right hand were discovered two punctures, as if made by a needle, about an inch and a-half apart, marking the entrance of the poisonous fangs of the snake. Upon each puncture there was a drop of nearly colourless fluid, without any hæmorrhage, tumefaction, or ecchymosis.

Here was a case sufficiently discouraging, if not, to all human appearance, hopeless. However I resolved not to abandon the poor sufferer, while the kind-hearted master entreated me to do what I could.

Ordering bricks to be heated for application to the præcordia and the feet, the first step of the treatment was to pour down her throat a teaspoonful of the ammonia, with as much water, but all power of deglutition being lost, some difficulty was experienced in accomplishing my object. By the aid, however, of the catheter as an œsophagus tube I succeeded admirably. The next step was to cut out and pare off the integuments and subjacent cellular and muscular tissues, extending my incision about one-fourth of an inch beyond the punctures. From the large wound, which was of an oval shape, not a drop of blood escaped in this operation. The husband was now directed to apply his mouth to the wound, and suck with all his powers, which he proceeded to do most readily, the natives having great faith in such a measure. This he continued, with all the energy he was capable of, for fully half-an-hour, without succeeding in procuring any moisture, while I repeated the ammonia steadily every ten minutes, till a full ounce was consumed. At length our perseverance was rewarded by some hopes of a restoration, for the poor distracted husband leaped up in an extasy of joy, exclaiming in his own language, "*Lohoo àtá sahib*," (blood is coming, Sir), showing his tongue covered with the vital fluid. In a few minutes more the action of the heart was faintly perceptible; the pulse at the wrist was just traceable in a thready thrill; she moved her head, gave a deep sigh, and sat up. Thus our persevering efforts for nearly two hours, were rewarded by the rescue of a fine young healthy woman from certain death;—in truth her recovery might be considered, without any hyperbole, a resurrection from the dead. The only treatment pursued afterwards was the free cauterization of the wound by *Nitras Argenti*,—the application of a pledget of lint dipped in melted *Ceratum Resinæ*, covering the whole with a hot poultice. The wound healed kindly by granulation, and she was able to resume her duties in a few days.

In this remarkable case the powers of the ammonia were proved most incontestibly as a safe and sure remedy, as it has ever since and during my time in India—extending now to a quarter of a century—been esteemed and experienced to be, in all bites of venomous reptiles. Indeed, such is the confidence of the natives in the remedy, and more especially the native soldiery, who in their huts are much exposed to these injuries, that the moment any one gets bitten, he runs to the nearest European officer, calling out for the *Sāfed Dâwy*, "the white medicine," assured that with a few doses of that, he is safe, and disappointment in the curative effects is never experienced. By "the white medicine" is meant a preparation of ammonia, which used to be imported in great quantities from England, and generally kept at hand by every officer,—the old-fashioned *Eau de Luce*, *Liquor Ammoniæ Succinatus*.

One cannot help regretting, that the medical officers of the hospital into which that poor unfortunate fellow, who was bitten in the Zoological Gardens last year, was admitted, were not apparently sufficiently acquainted with the powers of ammonia in such cases. If they had been, it would no doubt have been had recourse to.

BRIGHTON, *8th March*, 1853.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

I. *An Introduction to Clinical Medicine.* By JOHN HUGHES BENNETT, M.D. Edin. 1853, pp. 134.

What to Observe at the Bedside and after Death in Medical Cases. Published under the Authority of the LONDON MEDICAL SOCIETY OF OSERVATION. London, 1853, pp. 136.

THE above works supply a gap which has long existed in medical literature. The first is rudimentary, being intended to facilitate students in availing themselves of the advantages of clinical instruction. The last, taking a much wider range, will serve as an admirable guide to the practitioner in *observing* during life and after death. Of the necessity which exists for training the powers of observation in the medical profession, there can be no doubt, and yet we rarely find clinical instruction so much devoted to this branch of education as its importance demands. Teachers are too apt to confine themselves exclusively to therapeutics, and rather to bring under the notice of the student the efficacy of some drug or peculiar mode of treatment, than to point out to him the method of observing, and observing accurately, the symptoms of disease—the connexion between the different symptoms—their dependence on morbid processes and changes—and their modification by external phenomena or other causes.

Dr. Bennett's work is a reprint of six lectures, "On the Method of Examining Patients;" "Percussion;" "Auscultation;" "The Use of the Microscope;" and the "Diagnosis of Skin Diseases."

In the first lecture he lays down a systematic method to be followed in the interrogation and examination of patients; notes the various points connected with the different organs and parts of the body, and the chief collateral circumstances which demand investigation; and gives many useful hints as to the manner in which information should be derived. The following extract will show the scope of this part of the work, being an arrangement of the symptoms and circumstances demanding attention connected with the—

"Digestive system. *Mouth*—teeth and gums. *Tongue*—mode of protrusion, colour, furred, coated, fissured, condition of papillæ, moist or dry. *Pharynx and œsophagus*—deglutition, if impeded, examine the pharynx with a spatula, the aurical glands, neck, etc. *Stomach*—appetite, thirst, epigastric uneasiness or pain, swelling, nausea, vomiting, character of matters vomited, borborygmi, flatuosity, eructations. *Abdomen*—pain, distention or collapse, tumours, constipation, diarrhœa, character of dejections, hemorrhoids. *Liver*—size, as determined by percussion, pain, jaundice. *Spleen*—size, as determined by percussion, if enlarged, examine blood microscopically." P. 4.

To complete the general outline furnished in this lecture, Dr. B. adverts to the objects of microscopic enquiry, and to the manner in which a *post mortem* examination should be made.

With regard to this latter point he very justly observes:—

> "The three great cavities should always be investigated. Nothing is more injurious to the scientific progress of medicine, than the habit of inspecting only one of them to satisfy the curiosity of the practitioner, or to determine his doubts on this or that point." P. 8.

In this opinion we entirely concur; and it is a matter of congratulation that under the system which now exists in our hospitals, the study of morbid anatomy bids fair to be prosecuted to its utmost limits; and it is to be hoped with the most beneficial results.

In the lecture on Percussion Dr. Bennett advocates the use of the pleximeter and hammer. We confess to a decided preference to the fingers, as more convenient, and generally more accurate. Both require practice to ensure dexterity; but we have never known any one fail, who sedulously applied himself to the acquisition of that dexterity, with the fingers. M. Piorry follows a medium course, employing the pleximeter and fingers. These are matters of little import, except in so far as the increase in number of the implements which a practitioner must carry constantly with him, is productive of serious inconvenience.

After a concise lecture on Auscultation, Dr. Bennett in the fourth and fifth explains the construction, mode of employment, and practical application of the microscope. The success with which Dr. B. has cultivated this branch of medical science, (for histology is certainly now to be regarded as such,) and the zeal with which he has promoted the use of the instrument in Scotland, may form an excuse for the unduly large share of his work which he has devoted to its consideration. We hardly think, however, his descriptions of the mechanism and varieties of microscopes and allied instruments, properly introduced into a book professing to be an introduction to clinical medicine, whatever be their interest and utility intrinsically. Nor although he disclaims all such intentions, can we disguise our apprehensions, that the tendency of his remarks will be to exalt unduly the powers of the microscope as a means of diagnosis. This is an error into which many young practitioners and students at the present day fall. For example, in cases of cancerous disease, physical examination, symptoms, and history, are neglected or carelessly enquired into, and a fearless diagnosis made on the microscopic characters of a discharge.

"Under certain circumstances," says Dr. Bennett, "the diagnostic value attached to the examination of the fæces is greater than that of the sputum or of vomited matters." And then he states:—"In typhus and other putrid fevers, the stools contain masses of large crystals of phosphates or carbonates." So they undoubtedly do, and this is a valuable pathological fact. But in diabetes and numerous other diseases, similar crystals are found in the evacuations; so that as a diagnostic their presence and detection is of no moment. Nor is typhus a disease, which requires such adventitious circumstances, to render its diagnosis facile or accurate.

Of the labours of Dr. Bennett in the field of cancerous pathology we are well aware, and doubt not that eventually they will result in a thorough knowledge of the nature of this morbid degeneration, and in a correct appreciation of the appearances characteristic of it. But meanwhile we are somewhat incredulous as to the certainty with which, in the hands of most practitioners, however sedulously they have cultivated the practical use of the microscope, a sure diagnosis can be formed by its means, irrespective of other symptoms and other modes of examination.

The last lecture is devoted to skin diseases, and shortly notices the means and appearances by which the several classes may be recognized.

Dr. Bennett's work, on the whole, is one of great value, but might be rendered still more useful, by entering with more minuteness on some of the subjects of which it treats. It adds to his reputation as a diligent cultivator of medical science, and as an enthusiastic and pains-taking teacher.

It is to the formation of the "London Medical Society of Observation," that we are indebted for a work which we have no hesitation in asserting, constitutes one of the most important additions to modern medical literature. "What to Observe at the Bedside and after Death in Medical Cases," is a book designed "to facilitate the labour of analyzing and comparing clinical observations, and to increase their precision by arranging and investigating them on a uniform plan." The result is highly satisfactory, and reflects much credit on the gentlemen who have associated themselves in its construction.

We cannot at present enter into an extended analysis of the work, but will merely give a general outline of its contents, and a few specimens of the mode in which the plan in view is carried out.

Part I. is devoted to the "Clinical Examination of a Patient," and its first section to the "Personal Description and Peculiarities of the Patient in Health." The sub-division regarding Intellectual and Moral Peculiarities may be quoted; it being borne in mind that it has especial, though not sole, reference to cases of insanity:—

"6. *Intellectual peculiarities.*—Amount of education, readiness to learn, character of favourite studies or reading, habit of reading popular medical works. Habits of business, power and habit of concentrating attention. Readiness of conception. Memory, generally or in respect of special subjects. Reasoning powers and judgment, habitual character of association of ideas, philosophical, ætiological, utilitarian, poetical, trivial, &c. Power of imagination. Power of language and expression.

"7. *Moral peculiarities.*—General behaviour. Disposition, cheerful or melancholy, communicative, reserved or sulky, social or retiring? Inquisitive or careless, closely observant or not of the state of the bodily functions and of variations in health? Amount of ambition, its direction, vanity, self-love, love of applause; excess or deficiency of the above principles. Natural boldness or timidity, fortitude. General benevolence or malignity of disposition, readiness with which the passions are excited. Force of domestic affections, of sexual love. Force of sense of duty or of the moral sense, religious feeling, candour, integrity, veracity, or tendency to deceit and cunning. Natural sympathy, tendency to imitation. Prudence. Tastes, etc."

The second section has reference to the previous history of the patient, and includes the points to be observed with regard to hygeia; previous general health; previous sexual condition; and family history of patient; under all of which heads we have them referred to, in the same concise manner as in the passage already quoted.

Section third refers to the course of existing disease, prior to the patient coming under observation; and section fourth to the condition of the patient at the time of observation. This last is most skilfully elaborated. Commencing with generalities, it successively treats of all the tissues, organs, structures, mechanisms, and secretions of the body, and the numerous points connected with each separately, which demand the careful scrutiny of the observer.

Dr. Bennett's shorter view of the symptoms and points connected with the digestive system is here extended to its utmost limits. Let us take as an example sub-division No. 92:—

"*Tongue.*—(Noting its characters as early as possible in the examination of the patient.) Its size, form, thickness, general colour, pale, red, livid, etc. colour locally, at tip, edges, etc. *Surface* of tongue, dry, moist, smooth, glazed, fissured, lobulated, exhibiting marks of bites, vesicles. *Consistence*—hard, soft, fluctuating, tense, flaccid, œdematous, presenting sodden appearance, indented by teeth. Abscesses—(606 *et seq.*,) tumours, (631,) fungosities, sloughing ulcers. *Papillæ*—their size and form, (stating which papillæ, and where situated.) Furs on tongue, their position, colour, thickness, degree of adhesion to surface, mucous coating on tongue, watery aspect of tongue, exudations, etc. bleeding. *Sensations* of heat in tongue, of coldness, pain, throbbing, etc.; degree of tactile sensibility, at tip, sides, and base of tongue, (tested by Weber's method.)"

It may be urged that such minute observations are inutile, and that the plan indicated in this paragraph is not feasible in practice, when carried out to its full extent, including all the parts and organs of the system. It must, however, be remembered that it is only by minute enquiries and investigations that medicine can ever approximate the exact sciences; but the main advantage to be reaped at present is undoubtedly the aptitude for correct and particular observation which the plan laid down in "What to Observe" will impart. We could have wished to quote more largely from the First Part, more especially from the sub-division on symptoms referrible to the intellectual and moral faculties, a class which too frequently are neglected, or not sufficiently considered, but our limits forbid.

Part II. is devoted to "Examination of a Body after Death," and will prove highly valuable to the pathologist and medical jurist; mentioning every point connected with the morbid appearances of the different structures.

The arrangement and division of the work is admirably calculated for the purpose of its design. Should the "London Medical Society of Observation" bear no more fruit, it will by this small book secure, and justly, the warm approbation of the profession.

II. *The Descriptive and Surgical Anatomy of the Arteries, and Relative Anatomy of the Veins and Nerves of the Human Body.* By Joseph Henry Corbett, M.D. Pp. 355. Dublin: Fannin & Co. 1852.

A Manual of the Dissection of the Human Body. By Luther Holden, F.R.C.S. Pp. 563. London: Highley & Son, 1851.

Demonstrations of Anatomy; being a Guide to the Knowledge of the Human Body by Dissections. By George Viner Ellis. Third Edition. Pp. 822. London: Taylor, Walton, and Maberly, 1852.

There is no truth connected with medical education more generally admitted, and none that ought to be impressed with more earnestness on the mind of the student, than that anatomy is the foundation of surgery and of rational medicine. A knowledge of this important branch of science, gives confidence to the surgeon in performing operations on the most delicate organs, and it enables the physician to trace to their true seat the signs of internal diseases. Accordingly, it is with much satisfaction that we observe an increased attention paid to its details in all its departments. While we cannot fail to acknowledge and esteem, the labours of those who have of late added so largely to our information on minute anatomy, and to hail with delight the contributions which are now and again brought in by the workers in the prolific field presented in the study of histology, we are pleased to find that the investigation of the more palpable structures disclosed by the scalpel, is not deserted for the more attractive niceties revealed by the microscope. We have heard it said that anatomy is one and indivisible, and with truth, for its several departments are not to be looked on as rival branches of study, but as parts of a whole; of which one ought not to be cultivated at the expense of another, but each should receive a proper share of attention.

Of late years, the opportunities for the study of practical anatomy in this country have greatly increased, and no one need now repair to the Parisian schools for what he can obtain here with even greater ease, especially in schools of medicine established in large manufacturing towns. In proof of this, we need only refer to the Report read by Dr. Strang to the Inspector of Anatomy for Scotland, from which it appears, that if the schools of medicine in Glasgow were attended by double the number of students, there would still be ample opportunities for the pursuit of practical anatomy.* This is a matter of great importance, because in addition to the intimate knowledge of the organs of the body, which is only to be obtained by a careful and frequent use of the knife, the student acquires an ease and delicacy of manipulation, which is of vast importance in surgical practice.

Practical anatomy is taught in two ways; first, there is a public explanation to the students of each region of the body in succession, with such practical remarks as the importance of the part seems to demand; and second, each student performs dissections for himself. The public demonstration includes directions for dissection, descriptions of the parts exposed, &c. &c. and is in part designed to be a guide for the student when dissecting alone. It is in the dissecting-room, then, that the student is to gather his chief knowledge of anatomy. In this he is assisted by the explanations of his teachers, but a great deal must be left to be learned by himself from books written for his guidance. It is, therefore, of great importance that these should contain clearly defined directions for proceeding with the dissection, as well as faithful descriptions of the several parts in the order in which they are brought to view. The later editions of some of these works are now before us.

Dr. Corbett, in the first, takes up a special department, that of the arterial system. Of this book we shall say little. We think that at present there is no call for it, as Dr. Harrison's on the same subject has long held its ground as a text-book of the arteries, and the hand-books of anatomy and dissection in ordinary use, contain an account of their descriptive and relative anatomy sufficient for most purposes, while the surgical application of such knowledge is to be found in a host of standard works on the subject. Dr. Corbett seems to think differently, and accordingly has written his book, with the contents of which we have little fault to find. In the preface, the author states that "during its preparation his principal aim has been to fix the reader's attention to the immediate object of his study; to avoid all matters calculated to divert the current of his thoughts; to describe the relations of each artery in a systematic form; to dwell chiefly upon the points most important to be learned by the student, whether engaged in ordinary dissection, or in preparing for his final examination. It is also intended that the reader, when tracing the arteries, should experience assistance in acquiring some knowledge of the accompanying veins and nerves, without additional labour or loss of time." It is impossible to trace the arteries, veins, and nerves, without making a proper dissection of the muscles, and if a short description of the adjacent structures had been added, the work might have appeared as a manual of dissection. Indeed, in some places the author leaves the subject in hand, and notwithstanding his desire "to avoid all matters calculated to divert the thoughts of the student" from the arteries, he diverges into an account of the surrounding parts, as for instance, in giving the course of the external iliac artery, where he introduces that anatomical puzzle, the folds of the pelvic fascia.

---

* We have every inclination to give our readers an opportunity of perusing this Report, but, its contents being strictly confidential, we can only refer to the general conclusion.

The origin, course, and termination of each artery is described fully and accurately, and the relation it bears to the structures in the vicinity is well defined. As a systematic treatise the usefulness of this work would have been much increased if the deviations in origin and position, to which the principal blood-vessels are liable, had been noticed at greater length. In the anatomical description there is an inelegance which frequently creeps into medical works—the jumbling together, in the same sentence, of Latin and English names applied to the same part. There are many Latin terms, the employment of which custom has authorized, and which would sound rather oddly if translated into English, and in that form introduced into an anatomical work, *e.g.* pericardium, vena cava, &c.; but when the Latin and translation can be used with equal propriety, it makes a strange medley when they are used indiscriminately in the same sentence. The following passage from Dr. Corbett's book is an illustration of this:—"At the superior costa of the scapula above the semilunar notch, we notice the supra-scapular from the axis thyroideus; at the base or posterior edge, extends the arteria posterior scapulæ, also a branch of the thyroid axis; lastly, at the anterior margin, the arteria subscapularis lies in contact with the muscle of that name. In the fossa supra-spinata the branches of the supra-scapular can be seen underneath the supra-spinatus muscle." In other recent works this incongruity is avoided as much as possible, by giving the artery the Latin name in the paragraph where it is regularly treated of, and in all other places using only the English form of that name, for it can hardly be called a translation. Thus in describing the branches of the subclavian, the following would be introduced as mammaria interna, axis thyroideus, vertebralis; in all other parts where they appear they would be spoken of as the internal mammary, the thyroid axis, the vertebral.

The last twenty pages are devoted to the operations on the arteries. Of this part the author says:—"The operations on the arteries are placed in a separate chapter, and can be referred to by the student who desires to understand the leading features of each operation; but the details of surgical practice have been withheld, as inconsistent with the design of an anatomical work of this nature." Directions are given for placing a ligature on each artery likely to require it. These contain nothing new, and are just the substance of what is to be found in all works on surgery and surgical anatomy. In a work on the arteries issuing from the Dublin press, we might have expected some notice of the success which has followed the treatment of aneurism, by pressure of the trunk of the affected vessel, in the hands of the Dublin surgeons. But in accordance with the above remark we are referred to the works of others on that subject.

In the perusal of this work we have found little to censure, and little to recommend. Dr. Corbett may count upon its being used as the text book of his own students; but he can hardly expect to find many in dissecting-rooms out of Dublin.

The next two works on our list are the productions of the demonstrators at two rival metropolitan schools, Bartholomew's and University College. Each professes to be a complete guide to dissection, and treatise on regional anatomy. In both, the surgery of the regions is generally omitted, as being out of place in a work to be used in dissecting, except in the case of the perineum and abdomen, where the parts concerned in lithotomy and hernia are explained in detail. From their nature these works cannot be noticed at any length, being little more than a record of a series of observations; we shall, therefore, only indicate a few points in which they differ from each other, and from others on the same subject.

Mr. Ellis's we consider the most perfect system of dissection we possess. It is evidently written after a great deal of research and observation. When first brought out it supplied a want that was much felt. In saying this, however, we must make a reservation in favour of the *Dublin Dissector*, which contains very accurate directions for dissection, and being interspersed with many physiological and surgical remarks, is peculiarly interesting to the young student. Mr. Ellis keeps strictly to the matter in hand, and examines every part with great minuteness. Indeed we think that he has rather overdone this. He represents the dissection of many regions as far too complicated, by introducing the details of minute cutaneous and other nerve twigs. This is Mr. Ellis's hobby; he has devoted a great deal of attention to the distribution of the nerves, and has introduced the results of that study into his manual, so that it contains an amount of information on that branch of anatomy which is to be met with in few other works. We think that to make it more useful to beginners, the author might put some mark to the paragraphs containing descriptions of the less important divisions, and state in the preface that parts so marked should be left till the second or third dissection, and thus enable the junior student to save the time he spends in looking for parts he cannot see, or has already cut away. It is not to be supposed from this that we would have him to be superficial at first; on the contrary, we would wish him to be as careful as possible; still, with all the attention he could reasonably be supposed to pay to the dissection, there are many of the details which he must lose in a first attempt.

Mr. Holden seems to have found this minuteness a disadvantage, for the preface to his own work begins:—"If any apology be needed for the appearance of the present manual, it may be stated, without any wish to disparage the labours of others, that the works of this kind hitherto published, seem to the author open to one or the other of two objections: either as being too systematic, and therefore not adapted for the dissecting-room, or as obscuring the more important features of anatomy by a multiplicity of minute and variable details." He therefore avoids these faults, and his descriptions are concise and in general correct. His language is very plain, and in some places almost popular, so that it is easily intelligible to the beginner, but sometimes not precise enough for an advanced student. As a fair specimen of the kind of description he gives, let us instance the following passage:—

"50. Structures surrounding the urethra in its passage through the pubic arch. Returning to the urethral triangle, let us next examine the deepest stratum of the perineum, or what may be appropriately called its floor. This, in every point of view, is the most important part of our subject, since it comprises the anatomy of the structures which surround the urethra in its passage beneath the pubic arch. It need scarcely be said that this part of the urethra demands special attention; for here the incision is made in lithotomy, here is the most frequent seat of stricture, &c. Notwithstanding its practical interest, the anatomy of this part is seldom thoroughly understood, because it is a kind of neutral ground between the perineum and the pelvis, and because authors differ in the description of it.

"To make the matter as intelligible as possible, we will first give a brief sketch of the general plan upon which this stratum is constructed, and then examine separately its constituent parts.

"First, then, as to what may be called the groundwork of the stratum itself. Supposing that the crura penis, with their respective muscles, be raised from their attachment to the bone—and this, by the way, requires an experienced hand—we then observe that the pubic arch is blocked up by a plane of muscular fibres, passing from one side of the arch to the other. This muscular plane is covered by a fascia, called the deep perineal, which not only gives strength to the plane, but also affords surface for the origin of its muscular fibres. About one inch below the symplysis pubis the plane is traversed by the urethra; in the substance of it there runs on either side the large artery of the bulb; and there are also on either side of the bulb Cowper's glands.

"Now this muscular plane, though apparently consisting of a single muscle, is, in point of fact, made up of three; herein lies the difficulty, a difficulty not inherent in the subject itself, but because we have not a view of the parts from their pelvic side.

"What, then, are the three muscles? As follows:—a little above the anus there are the anterior fibres of the levator ani; higher up, that is behind the bulb, there is the transversus perinei profundus; still higher, namely, on the level of the urethra, there is the constrictor urethræ.

"But the urethra is an inch below the arch; what, therefore, blocks up the remainder of the arch above it? A strong aponeurotic septum, which we may call, if we please, the triangular ligament. This does not appear now, but we shall see it presently." Pp. 358, 359.

Though individual portions of the work are well written, taken as a whole, there are some drawbacks to its usefulness. The great object of these books is to enable the student to advance without the constant assistance of the demonstrator. The principal difficulty of this lies in the finding out the order in which the parts should be exposed. What shall we do next? is the invariable question. Now it is precisely in this that Mr. Holden fails.

Mr. Ellis begins at the head, and each region, from head to foot, is described in the order in which it would be dissected; while if it be preferred to begin at the arm or leg, the reader has just to strike in at that part of the book.

Mr. Holden's is divided into four parts. The first, as being that usually commenced with, is the dissection of the arm. This is treated in the usual way, from shoulder to fingers. Part second is occupied with the head, neck, and thorax, which are recommended to be dissected in the following very unusual order:—Anterior cervical region; submaxillary triangle; supra-clavicular region; face; pterygoid and styloid regions; chest; mediastinum; pericardium; pleura; heart; lungs; pharynx; palate; larynx; tongue; scalp; base of skull; orbit; nose; back. In part third the abdomen and pelvis are taken up; and in part fourth the brain, eye, ear, mamma, and testes. A student would find great difficulty in following out a dissection according to such a plan, and the absence of a table of contents would be greatly felt in pursuing any other. If the author, in a new edition, would re-arrange the matter and add a table of contents, the value of the work would be much increased.

In his anxiety to simplify, Mr. Holden either refuses to describe, or denies the existence of, some parts that have been described by other anatomists, and are frequently introduced into surgical and physiological works, so that the student must hear of them, whether from him or not. For instance:—"On the posterior wall of the (right) auricle, between the orifices of the veins, some anatomists speak of a prominence to which the name 'tuberculum Loweri' has been given. We have not met with anything of this kind in the human heart, though it may be observed in that of quadrupeds." P. 218. Accordingly the reader will in vain seek for this structure in the index, and will be compelled to search in some other book for an account of it. We also find this intentional omission in some parts of practical importance. As a good instance of the difference between the two works under consideration, we shall transcribe the description of the parts concerned in femoral hernia, given in each respectively.

First, Mr. Holden's:—

> "12. Practical application of the subject. From what has been said we can have no difficulty in understanding—1. At what point a femoral hernia escapes from the abdomen; 2. the course which it takes, and its relation to the surrounding parts; 3. the proper mode of attempting the reduction; 4. the structure and arrangement of its coverings; and lastly, where the structure will probably be situated.
>
> "The hernia escapes from the abdomen through the femoral ring, that is, under the weak part of the crural arch, between the femoral vein and Gimbernat's ligament. This forms the mouth of the sac, or that part of it which communicates with the abdomen, &c.
>
> "With regard to its *coverings*, the hernia, of course, protrudes before it the peritoneum, technically called the hernial sac. It next pushes before it the sheath of the femoral vessels, which forms an investment called the *fascia propria*. But if it make its way through an opening on the inner side of the sheath, then there will be no fascia propria over it. Lastly, there is the subcutaneous fat and cellular tissue.
>
> "Since the fascia propria is in some instances absent, and in others exceedingly thin, we ought in operating to be careful not to make the first incision too deep; for there may be nothing more between the skin and the sac but the subcutaneous tissue, &c." P. 426.

The following is from Mr. Ellis's work:—

> "Femoral hernia.—A protrusion of the intestine into the thigh beneath Ponpart's ligament, constitutes this kind of hernia. In this affection the gut descends always in the femoral or crural sheath, and commonly on the inner side of the vein, though occasionally on the outer side of the artery.
>
> "*Course.*—The course of the intestine from the abdomen to the surface of the body is vertical at first, through the crural ring and along the crural canal as far as the saphenous opening, but here it changes its direction and comes forward . . . .
>
> "*Coverings.*—In the course above specified, the intestine is clothed by the following structures, that are elongated and pushed before it; they are here enumerated from within outwards, in the order in which they are received. First is a covering of the peritoneum lining the abdomen; next one from the crural septum across the crural ring; after this comes a stratum from the femoral sheath, unless the hernia bursts through an aperture in its side; still farther out is a layer of the cribriform fascia; and lastly, there is an investment of the superficial fat or fascia, together with the skin. From without inwards the order of the different strata will be reversed. The coverings may vary, or be conjoined in different degrees, according to the condition of the hernia; for in some instances, as above explained, the prolongation from the femoral sheath is wanting; and in an old hernia, the covering derived from the septum crurale is usually united with that from the crural sheath so as to form one layer, the fascia propria of Sir A. Cooper. In general, in an operation for the relief of the strangulated bowel, the surgeon, after dividing subcutaneous fat, may be able to recognize but little of the coverings enumerated by anatomists, until he meets with that of the subperitoneal fat, or the septum crurale." P. 211 *et seq.*

This latter is the true way to convey to the student a correct idea of the course and coverings of a femoral hernia. The structures which obstruct its progress are enumerated in order, and then the student is informed that the bowel may either stretch or burst through these; this depending on the size of the protrusion, the suddenness of its formation, and the violence of the force producing it.

Mr. Holden denies the existence of the septum crurale, the only notice taken of it being in a foot note. "Some authors (after Cloquet) speak of a covering derived from what they call the 'septum crurale.' But we have not met with this in our dissections." P. 426. If the reader wants to know something more of this disputed structure, he will find that it has no place in Mr. Holden's index.

Since Sir Astley Cooper wrote his treatise on hernia, the name "fascia propria" is usually applied to one of the coverings; but no term gives rise to more confusion in the mind of the student, and none to greater variety of description by those who have written since it was first used. We are of opinion that it should be altogether discarded from anatomical works, or at all events, only introduced in the way Mr. Ellis has done. It is a structure depending on a disease for its existence and name, and should have no place in the anatomy of the healthy tissues. As it is, the student has to make his choice of the following conflicting statements:—

In the *Dublin Dissector*, the subperitoneal tissue, surrounding the external iliac vessels, and extending over the lower part of the abdomen, is described as the "fascia propria." The femoral sheath gets that name in *Wilson's Anatomy*, as also in *Holden's Dissections*. But most writers on surgical anatomy agree in applying it to the femoral sheath and septum crurale, which become blended into one sheet by the pressure of the tumour. In consequence of the loose way in which this term is used, students are constantly looking for the "fascia propria" in dissecting the upper part of the thigh, while it can only be seen when a femoral hernia exists.

Practical men may object to the enumeration of distinct layers, as tending to mislead the young surgeon in operating, but if he has paid any attention to the causes which produce hernia, he will easily understand how a protrusion may lie near the skin and be reached by a few movements of the knife; while if he find it coated with a considerable layer of dense tissue, it is proper that he should be aware whence this can be derived. This can only be understood by remembering the structures which resist the passage of the bowel in its course from the abdomen.

Mr. Holden, in various parts of his book, introduces some surgical and physiological points connected with the region or structure under examination, which adds somewhat to its interest, and we consider the account of the actions of the muscles a useful adjunct to their descriptive anatomy.

Mr. Ellis, as before stated, keeps strictly to the subject announced in the title-page, and as a complete "Guide" to dissection, we consider his work unequalled by any yet published.

III. *The Emigrant's Medical Guide.* By JAMES FRASER, Surgeon, Fellow of the Faculty of Physicians and Surgeons, &c. &c. Pp. 235. Glasgow: James Hedderwick & Son.

THE author of this little work is one of the Inspecting Medical Officers for Emigrants, under the "Passenger's Act," and the object of it, as stated in the preface, is to explain the many peculiarities which attend diseases on ship board, and to "serve as a guide in the treatment of ordinary sickness, or probable accident." A very great number of diseases, medical and surgical, are adverted to, and their treatment shortly explained, in plain and perspicuous language, easily understood, we should think, by non-professional readers. Indeed something is said of almost all the diseases to which the human body is liable. There is nothing like quackery in the manner in which Mr. Fraser treats his subject—the whole being strictly professional—while at the same time the phraseology is freed from many technicalities, unsuited to a work intended for the non-medical public. Such technical terms and phrases, as are absolutely necessary and unavoidable in writing about diseases, are well and fully explained in a copious glossary appended to the volume.

A clear and popular explanation of such accidents as "Bruises and Sprains," "Burns and Scalds," "Frost Bite;" and such sudden affections as "Cramp," "Falling Sickness," "Fainting Fits," &c. with a short and succinct account of the mode of treatment, cannot fail to be useful to every one in the absence of a medical man, and especially so to persons on board ship, who are constantly liable to such accidents and diseases. Burns and scalds are very frequent accidents, and every non-professional person thinks himself capable of treating them, and is never slow in giving his advice in these emergencies. Few or none, however, ever think of taking into consideration, as a medical man would do, the degree and extent of the injury, and the constitution of the patient. Our author, in treating this subject, says:—

> "For practical purposes, burns have been divided into three classes: those producing mere redness, those causing blisters, and those producing mortification or death of the part burned. In the first class, or where there is mere superficial inflammation, the part gets well with or without the skin peeling off. In the second class, there is a much higher degree of inflammation, fluid is thrown out under the skin, and blisters formed; in trivial cases these dry up and heal; but if the injury of the skin has been so severe as to cause matter to form, they will sometimes be succeeded by obstinate ulcers; the pain of these burns is much severer than in the former class, especially if the blisters have been torn, and the deeper layer of skin exposed to the air and the contact of foreign substances. In the third class there is mortification or death of the part burned; here, for obvious reasons, there is not so much pain as in the last description of cases; but in all other respects they are infinitely more dangerous, and the sores that remain after the slough separates, are often months or even years in healing." Pp. 62, 3.

After a few words regarding the constitutional symptoms which attend or follow severe burns, as paleness of the countenance, violent shiverings, feeble pulse, and great collapse or sinking; and the fact of the danger being, in all cases, proportioned to the extent of the burn, its severity, situation, and the age and constitution of the patient, the treatment is spoken of—

> "In cases of no great severity, and where the skin is unbroken, cold should be immediately applied to the part; this may be done by soaking a towel or piece of soft linen in a mixture composed of one part of vinegar and one of water, or in cold water alone, or spirits and water, and applying it. This cooling treatment should be continued for a longer or shorter period, according to the continuance or abatement of the pain; these applications may be used whether blisters are rising or not, but not if the injury has destroyed the outer layer of skin, for in such cases acrid substances, such as vinegar or spirits, could not be borne. In many instances such measures will accomplish a cure without further trouble, for either blisters will not rise, or, at the worst, the superficial layer of skin will dry and peel off." P. 64.

Our experience fully accords with that of the author, in regard to the positive good effects of "cold water alone," in a large proportion of cases of partial scalds or burns. Where a large extent of surface has been injured, or where the burn affects the deep-seated parts, of course this remedy is not applicable; but for the treatment of all others, it only requires to be tried, to be proved a very effectual remedy.

Mr. Fraser does not confine himself, in his "Guide," to these more simple diseases and accidents. He has distinct, although short notices, of the more serious accidents, as "Broken Bones," "Dislocations," "Injuries of Head," "Drowning;" and the more formidable diseases, as "Bronchitis," "Inflammations," "Fevers," "Affections of the Heart," with a rather full account of "Female Diseases," and "Diseases of Children." Among the latter, we find "Convulsions," a very frequent affection, which almost every mother of a family will occasionally meet with, and a little knowledge of which, by the common people, might be of much advantage, in enabling them to apply some appropriate remedy, until proper medical assistance could be procured. Our author gives a very brief account of this disorder and its treatment:—

> "The disorder, as its name implies, consists of an unusual and violent contraction, with alternate relaxation of the muscles. When seized, the child has a bewildered look; the globe of the eye is agitated with irregular jerking movements; there is squinting, or the features are twisted; the jaws are forcibly closed, or there is grinding of the teeth, &c. Although the convulsive movements may be confined to the face, the whole body is more frequently involved; the countenance acquires a florid or violet colour, and the bladder and bowels are emptied unconsciously. The fit varies much both in severity and duration; it may pass off in a few minutes, or last several hours. In favourable cases sleep follows the fit, and the child awakes feeble and exhausted, but conscious and intelligent.
>
> "The above is a brief and imperfect sketch of an ordinary convulsion; it would, however, be impossible to describe the endless varieties met with; but mild, partial, or severe, *they alike demand prompt and earnest attention.*"

With regard to the treatment of a convulsion fit, the following plain directions could be followed out, on the instant, by any intelligent person, if a medical man is not present:—

> "During a fit, all tight bandaging should be loosened, the dress made quite easy, and the child placed in a recumbent position, exposed to plenty of fresh air. If the stomach be loaded with indigestible matter, an emetic is to be given at once. If the gums are swollen, they must be immediately and freely lanced down to the teeth; after the scarification, the child should have a warm bath for a few minutes, and then be carefully dried and wrapped in a warm blanket. A smart dose of calomel must be given, aided, if necessary, by an injection; but in all severe cases, especially in strong children, and where the fit has come on for the first time, several leeches should be applied to the forehead or temples, and the bleeding stopped when the leeches detach themselves. When the fit returns, even in a slight degree, fomentations of hot water, with mustard to the feet and legs, and blisters to the neck, upon the head, or behind the ears, will be advisable."

Upon the whole, this little manual is calculated to be of much benefit to the class for whom it is designed; and we are sure that many emigrants will have good reason to thank the author, for supplying them with a most useful addition to their libraries, during their voyage to the other side of the globe. The manner in which the various subjects are arranged and treated, does Mr. Fraser much credit.

SELECTIONS FROM MEDICAL JOURNALS.

I. DR. BERNARD'S EXPERIMENTS ON THE ELECTIVE ELIMINATION OF CERTAIN SUBSTANCES BY THE SECRETIONS.

Dr. Cl. Bernard has written a very interesting account of certain experiments made by him "on the elective elimination of certain substances by the secretions, and in particular by the salivary secretion." He remarks *in limine* that this secretion has not been examined with the same care as the urine, bile, milk, &c. in regard of the circumstance alluded to; and that it remains to be explained how the saliva chooses some, while it rejects other substances equally soluble in it. He performed two sets of experiments, which were ingeniously contrived and carefully repeated.

In the first series of experiments he injected into the right jugular vein a solution of yellow prussiate of potash, of iodide of potassium, and of grape sugar, and immediately thereafter he detected the second substance in the saliva, but neither of the other two; while in the urine, the prussiate of potash could be detected, but neither the iodide nor the sugar. Twenty-five minutes after the injection, abundance of the prussiate of potash was found in the urine, only a trace of sugar, but still no iodide. The saliva remained as before. The secretions were tested every half-hour, but no change occurred till the end of two hours, from the time after injection, when the iodide of potassium at length appeared in the urine. Neither the prussiate nor the sugar appeared at any time in the saliva, which eliminated only the iodide of potassium; and it is worthy of remark that this salt apppeared immediately in the saliva, while it was not detected in the urine for two hours. When, however, the solution of the iodide was stronger, it appeared sooner in the urine, though never within the hour.

In the second series of experiments, M. Bernard injected these three substances in solution, severally into the veins of the same animal at different times, as well as into the veins of different animals, and he always found that they comported themselves in exactly the same manner. Such was the case, likewise, when they were introduced into the stomach. Both grape and cane sugars, like the prussiate of potash, never appeared in the saliva, while they were eliminated more slowly by the urine. This observation seemed to contradict the assertions of some authors, regarding the saliva of diabetic patients, but on actually testing this secretion in 'la Charité,' M. Bernard found that there was no trace of sugar in the saliva, while, however, it could be detected in the expectoration from the bronchi, of such patients as had phthisis combined with diabetes. Neither sugar nor prussiate of potash would seem to pass into the bile, or into the pancreatic juice, in ordinary circumstances, but when sugar was strong in the blood, it was found in the bile, but never in the pancreatic juice.

In regard of the elimination of sugar from the economy, M. Bernard has noted a very curious fact, viz. that though the mammary secretion naturally contains a kind of sugar, it does not allow either cane or grape sugar to pass by it. Sugar of milk is much more difficult of fermentation than the other kinds of sugar, and may thus be distinguished from them.

When the iodide of potassium was injected into the vein of a dog, or introduced into its stomach, it could always be detected in the saliva within forty seconds. It also passed with rapidity into the tears, and into the pancreatic juice, while it passed with much greater slowness into the bile, in which it was often difficult of detection.

M. Bernard also injected lactate of iron into the veins of dogs, and never found it eliminated by the saliva; in which respect it agreed with the sugars and prussiate of potash. When iodide of iron was carefully injected into the vein of a dog, both iodine and iron were found in the saliva. In another dog, a solution of the iodide of potash was introduced into the stomach, by a fistulous opening, and afterwards another solution of lactate of iron; both substances were thereafter detected in the saliva, showing that the iodine gave to the iron the capability of being eliminated by the saliva.

M. Bernard at present merely wishes to call attention to these interesting facts, and does not offer any explanation of them. But the property which certain substances seem to possess, of being eliminated by different secretions, is not their only peculiarity. Their period of sojourn in the economy is also importantly different. Thus, M, Bernard remarks, that the iodide of potassium and other substances, perfectly soluble, and really dissolved in the blood, remain for a certain time within some of the organs of the body; and he finishes his paper with the following account of the experiments made by him, in order to investigate this sojourn of the iodide of potassium in the animal economy.

He introduced into the stomachs of several dogs, which had permanent salivary, gastric, and biliary fistulæ, a solution of two grammes of iodide of potassium. The same day the urine of these dogs exhibited the reactions of the iodide; next day it could be detected neither in the bile nor in the urine; and on several days following, no trace of it was found in these secretions. It seemed to be completely eliminated from the system; but examination of the saliva showed its presence still. The gastric juice also contained the iodide, both because it contained saliva, and also because it was furnished directly from the mucous membrane of the stomach. This persistence of the iodide in the saliva and gastric juice continued for three weeks, and possibly it may have continued longer. Purgatives have a great effect on the sojourn of the iodide in the economy; indeed, so much is this the case, that if purgatives were employed, soon after the introduction of the salt into the stomach, a few days sufficed for its total disappearance from all the secretions.

In concluding, M. Bernard observes, that these experiments show that substances which are soluble, and capable of circulating in the organism without producing mischief, present two sets of phenomena worthy of remark.

"1st. Some substances never pass into certain determinate secretions, *e. g.* the yellow prussiate of potash, cane and grape sugars; others show themselves in all the secretions, only with greater or less rapidity, *e. g.* the iodide of potassium.

"2d. Some of these substances are eliminated completely and rapidly from the economy, *e. g.* the yellow prussiate, sugars, &c.; while others are only *partially* eliminated by the urine, and may remain in the organism, showing themselves in other secretions for a longer or shorter time. The iodide of potassium offers a remarkable example of this prolonged sojourn of soluble substances in the organism,—a sojourn which, in the case of that salt, is prolonged, because the portion not eliminated and re-appearing in the saliva, instead of being expelled from the system, is constantly thrown back into the stomach, whence it is taken up by the circulation, and returned to the saliva, and so on.

"The chief conclusion," he continues, "to be drawn from this work is, that one cannot refer to any general law, the manner in which these substances act in the organism. The experiments made on one saline substance, can teach nothing regarding another: no one could have foreseen, for example, that the iodide of potassium, and the yellow prussiate of potash, salts equally soluble, should offer, in respect of their passage into the secretions, and of their elimination from the body, differences so very striking. Special researches on each particular substance are necessary, in order to establish its physiological history, which ought to be intimately connected with its mode of action as a therapeutic agent"—*Archives Générales de Médecine, January,* 1853.

II. M. FARDEL ON THE ALKALIZATION OF THE URINE.

On the 8th of February, 1853, M. Durand Fardel, Inspector of the Thermal Springs of Hauterive at Vichy, read a short paper to the Academy of Medicine at Paris, entitled, "On the Alkalization of the Urine, considered as a phenomenon of Elimination among the patients under treatment at the Springs of Vichy."

M. Fardel commences by stating, that hitherto physicians have been content to account for the alkalization of the urine of patients who drink the Vichy water, by supposing that the whole economy had been saturated with alkali, but he considers it more in accordance with modern physiology to maintain, that the Vichy water is eliminated by the organs of certain secretions, of which the skin and the kidneys are in his opinion the principal.

Supposing the ordinary dose of the Vichy waters to be five glasses daily, each of which would hold on an average 250 grammes, (8 oz. and 35 grs.) we should find at the end of twenty-five days—the mean duration of the treatment—that 150 grammes (4 oz. 6 drs. 45 grs.) of bicarbonate of soda had been introduced into the system, and, for the present, he disregards the other ingredients of the water. If 12 glasses are taken, 375 grammes; and if 20, which is sometimes done, 600 grs. or 25 grammes per day, would be absorbed, without counting that which enters by the skin, during a sojourn of at least an hour daily in the mineral bath. All this alkali has to be eliminated, and hence, under this mode of treatment, the urine first becomes neutral, and then alkaline; and the sweat likewise becomes changed in its reaction. But, argues M. Durand Fardel, this cannot be received as proof of the saturation of the system with alkali, either in a chemical sense, or in a physiological one. After one hour passed in a bath of Vichy water, and without having drunk one glass thereof, the patient's urine is immediately found neutral, or even alkaline. M. Chevalier has detected the alkali in the urine nineteen minutes, and the author thirty minutes, after its introduction into the system; and, as the treatment is pursued, this elimination becomes more rapid; but it differs somewhat in different individuals, especially as to the persistence of the alkalinity.

Enough, however, has been advanced to show that the mineral ingredients do not accumulate in the economy, so as to saturate it, but are rapidly eliminated therefrom by the sweat and the urine, a circumstance which can alone explain the tolerance by the system, of such enormous doses as those mentioned above. It is, however, probable, that the whole amount, or all the ingredients of the Vichy water, are not eliminated; but what precise quantity or ingredients are retained is not stated. Suffice it to say, that M. Durand Fardel does not consider the therapeutic effects of the Vichy water to depend merely, if at all, on their purely chemical action, but rather upon dynamical changes wrought by it on the processes of secretion and nutrition. He accounts for the fever which at first attends the use of the waters, by the want of custom in the organs to eliminate their mineral ingredients; but, as they become habituated to their extra work, the fever disappears. After a time, however, the patient experiences disgust, anorexia, &c. symptoms which indicate that the system no longer tolerates the waters, and if they be still persevered in, the alkaline cachexia, which Cullen has described, supervenes. It is only if thus abused, that these waters, instead of being a medicine, become a poison.

M. Durand Fardel concludes by stating, that it was his object, in the preceding remarks, to apply the physiological doctrine of the elimination of foreign substances by means of the various secretions, to the explanation of the therapeutic action of mineral waters, and especially those of the thermal springs of Vichy.

In the discussion at the reading of M. Fardel's paper M. Orfila made some interesting remarks on Saturation. There are in reality two kinds of saturation, one chemical, another vital. The following is an example of vital saturation:—When a poisonous substance is placed in contact with an absorbing surface, it is absorbed and carried by the circulating current to all points of the economy. When all the organs are saturated, and not till then, the superfluous matter which is absorbed after that, is eliminated. This fact he proved by the following experiments:—He placed a quantity of arsenious acid on a raw portion of the skin of a dog. He found that the animal died after two grains had been absorbed. Whatever the amount of arsenic laid on the absorbing surface, no more than two grains were taken up when death ensued. When one grain was applied, it was all absorbed, and the animal still lived. From this research he concludes that there is a limit beyond which absorption does not operate—that is vital saturation. In another series of experiments, he found that when the substance absorbed commenced to be eliminated by the urine, absorption again came into play, and that in proportion to the amount discharged by the kidneys. He considers that the bicarbonate may act in this way. Part may remain in the economy, while the rest may be eliminated by the urine.—*Gazette Médicale de Paris*, 12 *Fevrier*.

III. M. PETIT ON THE ALKALIZATION OF THE URINE.

M. Ch. Petit, one of the Inspectors of Vichy Waters, writes a reply to the memoire of M. Durand Fardel on the alkalization of the urine by the Vichy waters. He says, " M. Fardel represents the physicians as being guided in their treatment, by the desire of *saturating* their patients with bicarbonate of soda, but so far from that, I am never guided by the neutralization of the acidity of the secretions, but solely by the feelings of the patients and their tolerance of the medicine. With regard to the action of the waters, without contesting the influence of the nervous system on the changes which are accomplished in our organs, it cannot be denied that a great number of medicines act chemically, either as they do out of the body or modified by the living organism. The fact that the period of sojourn in the body of alkaline salts is very limited, is no proof that they do not exercise a chemical action. Few medicines remain long in the economy, but are we therefore to deny their action? M. Durand says that the soda acts as a foreign body to our organs, and is hence rapidly eliminated by the urine. But who does not know the important part which these alkaline salts perform in the accomplishment of our functions—that their intervention, without yielding up any of their proper substance, is one of the first and most important conditions of combustion, of the production of heat, and of the transformation of the tissues—that without this intervention assimilation is interrupted—that, in consequence, if the blood does not contain a sufficient proportion, the functions languish, and serious disorders are the result? Now, if we admit that the blood, during the use of the Vichy waters, contains a little more soda than in the normal state, and that it has acquired a greater alkalinity, may we not also admit that it has acquired particular properties—that it has become more fluid and more *fluidifying*—that it could then penetrate more easily into the diseased tissues, and act as a dissolving agent on the coagulated matter which forms the thickness of the tissues called *engorgements*, soften it, and thus reduce it to a state capable of being easily absorbed? This theory accounts for all the effects of the Vichy waters, and points to their employment in many chronic affections. The diminution of fat, which is usually seen during their use, can be explained by the unusual activity communicated to combustion—the result of the presence of an increased quantity of soda in the blood. If it be objected that the amelioration of the disease progresses for some time after the patient has ceased to drink the water, I answer, that that only proves that the blood can be modified in a durable or permanent manner by the employment of these waters, and that it is sufficient to add to the blood certain ingredients which are defective, to enable the *vis medicatrix naturæ* to come into play, and to maintain the economy in a normal physiological state, that is, in a state of health."—*Gazette Médicale, 19th Février*, 1853.

IV. STATISTICS OF THE LYING-IN HOSPITAL AT BERLIN.

The number of accouchements from 1st January, 1836, till 31st December, 1841, was 4124, of which 1435 were *primiparæ*. The number of women delivered in the hospital was 1349, of whom 27 died. The number delivered in their own houses was 2775, of whom 33 died. The number of twin cases was 58. Of the 4182 children, 2141 were males, 1997 females, and of 44 the sex is not given. Of 4080 born at the full time, 262 were still-born; of these 56 were in the hospital, and 206 in the patient's houses. 102 were born before the full period. Presentations—of head 3846, face 26, brow 3, breech 98, footling 63, knee 2, 83 completely irregular. In 61 cases of premature labour the presentation could not be discovered. 3572 deliveries took place without assistance; while in 552 the following assistance was required:—In 358 the forceps were applied; 101 extractions of the child; 2 irregular presentations rectified; 14 turning on the head, 1 on the breech, 75 on the feet; 7 forced deliveries, 7 premature deliveries; 6 cases of perforation; 8 of breaking down the head; 1 embryotomy; 2 cæsarian operations during the life of the mother, 1 after death; in 9 cases the cord, having prolapsed alongside of the head, was replaced; the placenta was artificially removed in 110 cases; in 3 the perineum was incised.

There were 67 cases of contraction of the pelvis from rickets. Of these, delivery was effected in 2 by the cæsarian section, in 1 by embryotomy, in 5 by perforation, in 8 by breaking down the head, in 5 by inducing premature labour, in 41 by the forceps, and in 2 by bringing down the feet.

Of the above 67, 9 mothers died; 2 after the cæsarian operation, 1 after embryotomy, 1 after perforation, 1 after breaking down the head, 2 after difficult delivery by the forceps, and 2 of hæmorrhage, following in one case, perforation, in the other, the application of the forceps.

In these cases 36 children were delivered dead, 32 (1 case of twins) were delivered alive.

Of the children born dead 5 were delivered by perforation, 8 by breaking down the head, 1 by embryotomy, 1 by artificial premature birth, 5 by turning and extraction by the feet, 1 by delivery by the feet, 14 by application of the forceps, and 1 by the cæsarian operation.—*A. Lereboullet und M. Ruefz. Zeitschrift fur Geburtskunde.*

V. CASE OF SUFFOCATION PRODUCED BY SULPHURIC ACID.

The interest of this case lies in the fact that death was caused by the action of the acid on the respiratory passages, without touching the organs of digestion.

A woman was found dead in her bed-room; she was seated on a chair, her head bent back, resting on the bed, and drooping towards her right shoulder. Her mouth was full of tough mucus, the lips, teeth, and gums presented the appearance of being corroded by an acid. Her right hand, placed across the body, held a small phial labelled *sulphuric acid*, (*poison.*) It contained about half a drachm of the acid. Death had occurred a considerable time before; the extremities were already cold.

Autopsy.—The tongue was contracted, the epiglottis corroded and reduced to a little triangular tongue with indented edges. The vocal cords were destroyed, particularly the right. The mucous membrane of the trachea was also removed, and the cartilages had the appearance of being dissected. The acid had penetrated into the two lungs, attacked the parenchyma, perforated the left pleura, destroyed the costal layer, and roughened the subjacent ribs.

On the surface of the lung there was a layer of sulphate of lime; the arch of the aorta, the superior cava, and the innominata veins contained clots having the appearance of dried wax. No trace of acid could be found in the stomach or œsophagus. The epithelial lining was quite entire, and the stomach only contained some mucus.

Dr. Gall remarks, "that he believes no similar case has been recorded. It is well known that the impression produced instantaneously on the tongue by the caustic, occasionally causes contraction of the pharynx sufficient to prevent deglutition, and death has been caused by the progress of the inflammation and tumefaction of the pharyngeal mucous lining and tonsils, when not a drop of acid has entered the stomach; but no case has hitherto been recorded in which the acid had penetrated into the bronchial tubes. Could this have been caused by a fit of coughing raising the epiglottis, and drawing the liquid into the trachea? Probably enough, and the acid afterwards would have run gradually into the minute ramifications of the tubes, causing corrosion as it passed along."—*Dr. Gall in Journal de Chemie Médicale.*

MEDICAL INTELLIGENCE.

1.—*Glasgow Mortality Bill.*—The Mortality Bills have been, during the last year, issued regularly every month with the list of diseases, made in perfect conformity with that adopted by the Registrar-General of England; and hence the bills of Glasgow are now comparable, in every particular, with those of the English metropolis.

By the census returns we find that the population, within the boundaries of our bill, amounted in 1851, to 360,138; and we find during the last three years, of which 1851 forms the mean, that the whole deaths were as follows:—

1850,	9,477
1851,	10,746
1852,	10,675

Or exhibiting a mean of mortality of 10,299. It hence appears, that the real average figure of mortality in Glasgow, in proportion to the living, is as 1 to 34·8.[*]

If it be recollected, what we formerly stated with regard to the deaths in other large towns, not only in England but on the continent, it is quite plain, that were we to exclude our great infantile mortality from our calculation (which we much fear arises more from moral than from physical causes), we would arrive at the to us important fact, that there are few places to be found in any quarter of the globe, where an adult population has a better chance of long life than in the city of Glasgow.

There is a peculiarity connected with the Mortality Bills of Glasgow, which, for some years, has attracted my attention—I mean the large figure of *still-born*—a peculiarity which, it is to be feared, arises, like that of infantile death, more from moral than physical causes. On consulting the tables for the last ten years prior to 1852, I find that there has been no less than an annual average of 824.2 inserted among the list of burials as still-born, and which, when compared with the average of deaths during the same period, shows these to have been as 1 to every 13 deaths, This is, indeed, a large figure; but restricting our enquiry to the last three years. we find it to be still greater. The following is the number:—

---

[*] We make it rather different, thus:—$\frac{360.138}{10.299} = 34.967.$

1850,	984, or 1 for every 9·63 deaths.	
1851,	1,083, or 1 " 9·92 "	
1852,	1,016, or 1 " 10·5 "	

or, on an average of three years, 1 still-born to 10 deaths.

I am aware that, for the purpose of throwing the best light on this peculiarity of our Mortality Bills, it would have been more satisfactory to have compared the still-born with the living births, rather than with the deaths; but, unfortunately for Glasgow, we have no account of births upon which any reliance can be placed. In the absence of such a record, however, it may perhaps be remembered, that last year we arrived, by several calculations, at the probability of there being then about 13,000 births within the four parishes of which our statistical bounds are composed. On this assumption, therefore, the still-born, on the average of the last three years to the mean births of the same period, have been as 1 to 12.

With a view of seeing whether this figure of still-born coincided in any degree with that of London, Liverpool, and Manchester, I lately addressed a letter to the Registrar-General of England on the subject, and I had for answer that no note is taken of the still-born in England. In the absence of all record of such matters in our own country, I naturally turned to the statistics of France, and here I found the following results, which are certainly curious:—

Throughout the whole of France, in 1850, the still-born to the deaths were as	1 to 31·28
In Paris alone, the still-born to the deaths were as	1 to 10·69
Throughout the whole of France, the still-born to the living births were as	1 to 31·7
In Paris alone, the still-born to the living births as	1 to 12·6

It appears, therefore, that Glasgow, during the last three years, has had a greater proportion of still-born, when compared with either deaths or births, than even the French capital has exhibited, and three times as many, in proportion to the deaths and births throughout the whole of France. We think that, had we been able to procure reliable data for the whole of England and Wales, and for Scotland, similar differences would have been shown as existing between the large cities, and the country at large. This is indeed a curious subject, and is well worthy of the investigation of the medical and moral enquirer.

I may perhaps be allowed to suggest, that although Glasgow, for these some years back, has given the most ample and striking proofs of physical, social, moral, and commercial progress that can be found anywhere, still it should never be forgotten, that there is yet much to be done in the way of further improving the circumstances and condition of many of her citizens. From what we see around us, there is little doubt that during the last twelve months the great majority of those engaged in commercial and manufacturing pursuits have been generally successful; that the labouring man has been constantly employed, and well remunerated for his labour; and that while the wages of the latter have been high, his food, and even luxuries, have been moderate in price; that, in short, there has been, on all men and on all things, the palpable impress of a prosperity such as has rarely pervaded, at any one time, the various classes of the community. There is no doubt, too, that, emanating from these circumstances, the figure of Glasgow mortality has been this year somewhat reduced; but, with all its diminution, it is still much above that of many other cities. And although our city has been for some time little afflicted with any very destructive epidemic, it must be recollected that there nevertheless still lurks, amid many of the dank and dismal recesses of our densely-crowded habitations, the ready materials, if not for occasioning, at least for disseminating disease and death. But, it may be asked, how is this evil to be mitigated? Why, by as far and as fast as possible getting rid of the already known causes which create and perpetuate diseases. It is therefore the province of you, my Lord and gentlemen, to endeavour, as the guardians of the public weal, to remove, as you have been so worthily doing, those plague-spots from the older part of the town, which have so long proved the haunts of the idle and the profligate, and also from henceforth to prevent new localities from becoming the dens of similar demoralization. Try, by every means in your power, to open up densely-peopled quarters to more light and air than they now possess, and to preserve open spaces in the suburbs, capable of ere long becoming the lungs of a future city. Endeavour also to control, as much as is consistent with the rights of property, the construction of dwelling-houses, school-rooms, and workshops, with a view of affording better ventilation, purer air, and greater comfort to their occupants; to extend the already great improvements made in our sewerage and drainage; and to control still further the cess-pools and other noxious agencies which affect the public health and public comfort—endeavour, in fine, to procure for this growing community that indispensable element of internal and external cleanliness—a constant and an abundant supply of pure water, coupled with every one of the other acknowledged sanatory improvements which the wise and the philanthropic have of late years advocated. These means will most assuredly be found fully calculated at least to mitigate many of the miseries, that would otherwise follow the utter neglect of such precautionary measures.—*From Dr. Strang's Address to the Magistrates.*

2. *Report of Glasgow Royal Infirmary for* 1852.—The number of patients remaining from the former year in the medical and surgical wards on 1st January, 1852, was 177. The number since admitted into this department has been 2132, making a total of 2309. Of these, 2093 have been treated to a conclusion; of whom, 1894 have been dismissed as cured, relieved, or from other causes, and 199 have died, leaving in this department on 31st December, 1852, 216 patients.

In the wards of the fever hospital, the number of patients remaining on 1st January, 1852, was 124. There have since been admitted into this class of wards, 1992, making a total of 2116. Of this number 1686 have been dismissed as cured, transferred, or from other causes, 274 have died, and there remained in this department on 1st January, 1853, 156 cases.

Hence it appears, that the number of patients remaining in the whole Institution on 1st January, 1852, was 301; that the admissions during the year amounted to 4124, making a collective total of 4425 who have participated in the benefits of the charity. Of this number there are 4053 whose cases have been treated to a conclusion, 3580 having been cured, relieved, or dismissed for other reasons, and 473 having died; and the whole number remaining under treatment on 31st December, 1852, was 372.

The number of patients upon whom operations were performed during the year 1852, (table, p. 15 of Report,) was 231. Of these 200 were cured or relieved, 22 died, and 9 of the operations were unsuccessful.

In connexion with the enumeration of individuals receiving medical relief throughout the year, is the large number of 6736, who have applied for advice at the dispensary connected with the hospital, and who have been treated as out patients. The importance of this auxiliary establishment is liable to be overlooked, in the more prominent claims for support which the system of in-door medical relief has on the sympathies of the benevolent, but the benefits accruing from the department of dispensary aid, as well as the popularity attending its operation among the industrious poor, are evinced by the large and increasing numbers who annually flock to the hospital for advice from all parts of the West of Scotland.

During the last four years of its history, the Royal Infirmary has been annually progressing in the amount of relief which it has been able to afford to the sick poor of the city and neighbourhood. This increase in the number of admissions is no doubt partly accounted for by the growing population, which must of necessity have an influence on the present and future prospects of the Infirmary, when compared with the history of the past, but during the year now elapsed it may be chiefly traced to the extensive prevalence of typhus fever among the poorer classes, and it will be in the recollection of the Court, that in their Annual Reports on two consecutive occasions immediately preceding the present, the Managers had occasion to impress upon the public the extreme probability of the recurrence of epidemic disease, as well as the inefficient amount of accommodation at their disposal, were such a visitation actually to take place. The occurrences of the past year have fully verified these anticipations. Fever, which towards the close of the year 1851, was observed to be spreading in various localities of the city, continued slowly and insidiously to increase during the months of January and February of the past year, and on the 7th of February, it was found indispensably requisite to have recourse again to the accommodation of the wooden building, constructed in 1847 to meet an emergency, and never intended by the Managers as a portion of the permanent accommodation of the establishment. As the year advanced, during the summer and autumn months, the returns began to experience such a favourable diminution, as to lead to the supposition that the disease had passed its culminating point.

Early in the month of October, fever again began to show symptoms of its recurrence in a more unmistakeable manner than it had exhibited at the commencement of the year, and on the 14th of October it was found necessary a second time in the course of the year, to occupy the wooden building. The number of admissions continuing on the increase as the winter advanced, the Managers found that the Infirmary accommodation was nearly exhausted, and on the 18th of December, when the number of fever patients in the hospital amounted to 228, they were reluctantly compelled to admit their inability to afford further accommodation, and at the same time they felt bound to make the necessary intimations to the Public and Parochial Authorities, and the latter have manifested great anxiety and diligence in procuring means for accommodating pauper fever patients. The alternative, that they were thus necessitated to have recourse to, has demonstrated to the Managers, and will no doubt satisfy this General Court, that the period has arrived when additions must be made to the permanent accommodation of the building, alike for ordinary as well as for fever cases, and that a considerable sum will soon require to be expended to further this object.

The number of persons admitted into the medical and surgical department of the hospital during the past year, exhibits but a trifling diminution when compared with the returns of the preceding year, and afford in their turn demonstrative evidence, that irrespective of the treatment of fever altogether, the accommodation of the department is too circumscribed, to meet the requirements of a numerous and annually increasing population, as well as to keep pace with those Hygienic improvements which are now considered absolutely necessary for the successful treatment of the sick in public hospitals.

In connexion with what may be termed the Medical History of the Institution, the Managers will be allowed briefly to advert to a Museum of Pathology, which, on the pressing recommendation of the Medical Committee, in concurrence with the medical officers of the house, they considered it advantageous to institute during the past year. It is well known to this Court, that independent of the benefits which the Infirmary confers on the suffering poor, there are other and very important claims which it has on the support of the intelligent of all classes. As a school for practical instruction in medicine and surgery, it occupies a prominent place in the estimation of the medical profession, as evinced by the large number of students who annually flock from all parts of the country to carry out their medical studies in Glasgow. The Managers considered themselves justified in voting a moderate annual grant, to continue at pleasure, for the purposes above mentioned, and they did this with less hesitation, as this new institution is calculated to give greater facilities for the more correct study of the healing art, and by thus raising the importance of the hospital as a school of medicine, they may at some future period derive a larger revenue from students for the privilege of attending the house. They are gratified to learn from the Committee appointed to manage the affairs of this department, that the new institution is being successfully carried out, and that the opportunities which the hospital affords of obtaining models and specimens of cases of rare and interesting disease, are of such an extensive nature, that in the course of a few years, they may expect to accumulate a very valuable collection of pathological specimens, which must ultimately prove highly available for the purposes of clinical instruction.

In the course of the year, the Managers had to deplore the loss by death of Professor William Thomson, one of the most zealous advocates and devoted friends of which the charity could boast. Acting for many years in the joint capacities of Manager and Medical attendant, Dr. Thomson's extensive and intimate knowledge of the affairs of the hospital, coupled with a mind richly stored with the most enlightened and liberal views of whatever tended to advance the social improvement of the people at large, were of inestimable value to the public and to the general management, and it is from a conviction that these services, so unostentatiously rendered, sprung from the purest motives of philanthropy, that the Managers so far deviate from their usual practice and record this passing tribute to his memory.

James Hannan, Esq. Dean of Guild, then moved, that in order to provide permanent additional accommodation for fever patients, this General Court authorize the Directors to expend such sum as may be found requisite for the erection of suitable buildings on the vacant ground belonging to the Infirmary, which motion was seconded by William M'Lean, jun. Esq. and unanimously agreed to.

3. *Quarterly Report of State of Disease in Glasgow Royal Infirmary.*—During the last three months the number of applicants for admission into this establishment has been unusually large, and exceeds in amount the returns of any similar period since 1847. A considerable increase has occurred in the number of medical and surgical cases, and the attendants have been reluctantly forced to limit the average residence of the cases, with the view of providing room for the urgent claims for admission with which they are daily beset. The principal pressure, however, has arisen in the fever department. From 1st January to 20th March, not fewer than 693 cases have been received into the wards allotted for this malady. Many cases sent as labouring under contagious diseases, have turned out on more minute inspection to be ephemeral ailments of a less grave character, but the larger proportion, amounting to 80 per cent. of the whole, have been examples of pure typhus. The form of fever recognized as relapsing, or gastro-hepatic, and which was so common some years ago, is now very rarely met with; the cases which on admission would appear to simulate the affection, generally merging into the milder forms of ordinary typhus. The mortality in consequence, over the whole class of fever cases, has been increased considerably, and during the months of January and February averaged about 15·1 per cent. There has been no change of importance in the type of the fever, the typhus symptoms being manifestly in accordance with the well known characters of the disease, as it has exhibited itself in constantly recurring visitations to this city. A disposition to internal inflammatory complications has, however, been more observable, especially during the late severe weather, than at any former period in our remembrance. As usual these concomitants have been chiefly confined to the respiratory organs, and have been more frequently met with in the shed accommodation than in any other part of the building. The month of February was peculiarly fruitful in cases of complicated typhus. It will be remembered that the cold at this period was unusually intense for the season, the mean temperature for the month being 33·2, or 5½ degrees below the average. To this circumstance do we attribute the fact of the following cases of complicated typhus having appeared in the shed wards during the month:—Typhus with bronchitis 21 cases, 7 deaths. Typhus with pneumonia 17 cases, 5 deaths. Other complications, 10 cases, 4 deaths.

Irrespective of the above casualties, the recoveries, as has been frequently observed, have been on the whole more numerous and satisfactory in the temporary accommodation, than in the permanent building. Small-pox still continues to furnish a fair proportion of the admissions, and many instances have recently occurred of the disease having originated among patients admitted to the medical as well as to the surgical wards, for totally different affections. Notwithstanding the late increase of cases to the surgical wards, and the extra accommodation furnished by a recent addition of sixty beds, the numbers requiring operative interference have been less numerous than formerly. With the exception of ten amputations of the limbs, resulting chiefly from injuries, two cases of herniotomy, and one case of lithotomy under the care of Dr. Lawrie, there have been no other operations of a capital nature calling for special notice at the present time. We regret to learn, notwithstanding, that hospital gangrene has re-appeared in several of the wards, and has been productive of much serious mischief. It scarcely admits of doubt, that this plague-spot has arisen from the accumulation, in any one department, of too large a number of open sores; and its frequent recurrence furnishes another strong proof of the necessity which exists for additional surgical accommodation.

4. *Glasgow Medico-Chirurgical Society.*—The first meeting of the session took place on Tuesday, the 18th March, at 8 p.m. Dr. Andrew Buchanan, President, in the chair. The Treasurer read a statement of the accounts for the past year. The following gentlemen were then elected Office-Bearers for the ensuing year:—Dr. Andrew Buchanan, President; Dr. Pagan, Dr. Ritchie, Vice-Presidents; Dr. James Adams, Dr. A. Mackie, Dr. P. Stewart, Dr. E. Watson, Dr. Kirk, Dr. Corbett, Council; William Lyon, Esq. Dr. Thomas Watson, Secretaries; Dr. John Coats, Treasurer.

W. Lyon, Esq. read the first part of a very interesting paper entitled, "Reminiscences of Hernia," in which he detailed a great variety of cases occurring in his practice, with valuable practical hints deducible from them.

5. *Glasgow Medical Society.*—At the last annual meeting the following gentlemen were elected Office-Bearers:—Dr. James Wilson, President; Dr. James Adams and William Lyon, Esq. Vice-Presidents; Dr. George Robertson, Treasurer; James Fraser, Esq. Secretary.

6. *Académie de Médecine.*—The Académie de Médecine yesterday elected as foreign members MM. Buffalini of Florence, Mott of New York, Warren of Boston, Riberi of Turin, Vieminckz of Brussels, Retzius of Stockholm, and Simpson of Edinburgh.—*Galignani's Messenger*, 12*th March*, 1853.

7. *Medical Reform.*—A new Medical Bill is expected to be introduced into Parliament during the present session, prepared and patronized by the Provincial Medical and Surgical Association, "to produce uniformity of medical education and qualification, and for the registration of those licensed to practise in medicine." We have not space in the present number to enumerate the proposed enactments, or make any remarks thereon; but if such a measure is introduced, we may perhaps take up the subject in our next.

8. *Death of M. Orfila.*—M. Orfila, the celebrated French toxicologist, died at Paris on Saturday the 12th ult. of inflammation of the lungs. He had long filled the chair of Medical Chemistry in the Faculty of Medicine at Paris, and few of our professional friends who have recently visited the French capital, can fail to recall his kindness of manner and anxiety to impart information. M. Orfila has bequeathed a sum of 126,000 francs to various medical institutions, of which sum 60,000 francs are to be appropriated to the magnificent museum which bears his name. His funeral on the 14th ult. was attended by the *elite* of the Medical Faculty of Paris.

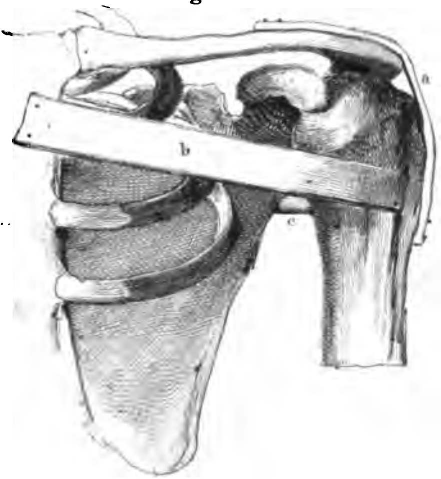
9. *Death of Dr. Brown.*—We regret to have to record the death of Dr. Thomas Brown of Langfine. Dr. B. was a Fellow of the Faculty of the Physicians and Surgeons, and formerly one of the Physicians to the Glasgow Royal Infirmary, and Lecturer on Botany in the University. He retired from practice many years ago, and has since resided on his estate in Ayrshire; a rare instance in our profession of the toils of an earlier career being compensated for by the leisure and retirement of advanced life.

BELL AND BAIN, PRINTERS, GLASGOW.

Plate II

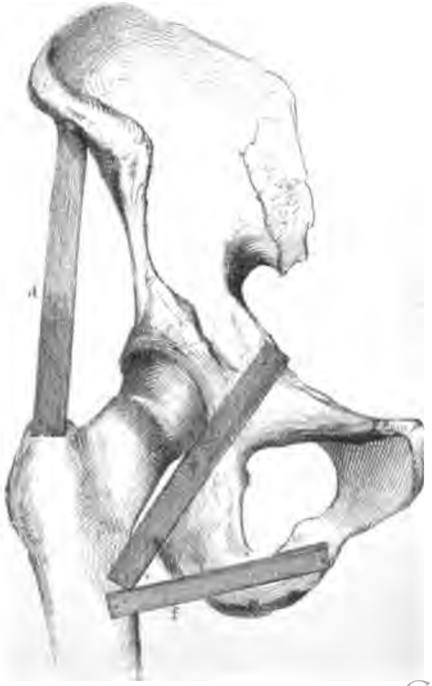
SHOULDER JOINT ARTICULATED WITH CAOUTCHOUC.

Fig. 1.



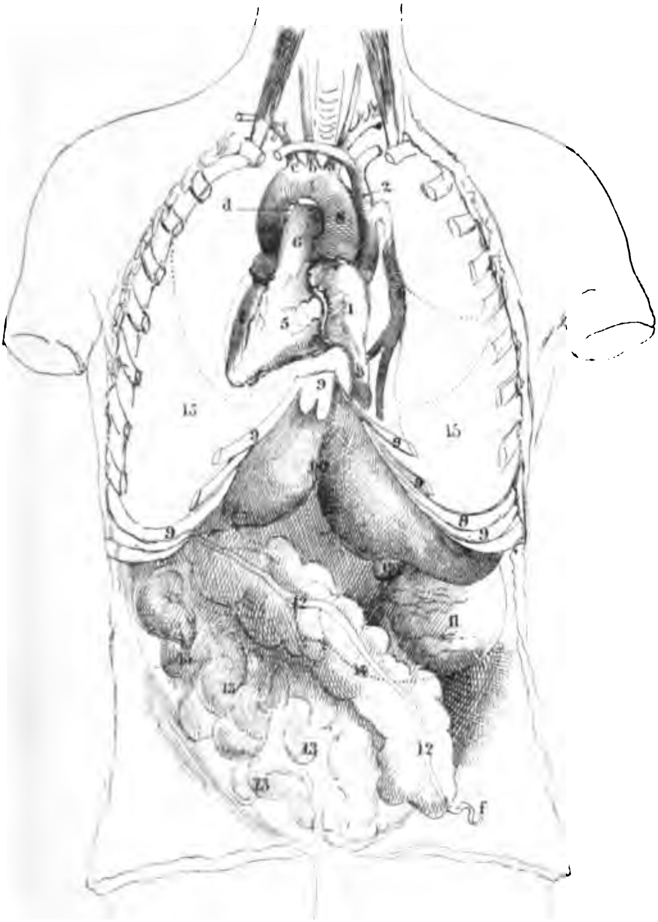
HIP JOINT ARTICULATED WITH CAOUTCHOUC.

Fig 2.



D^R GEO. BUCHANAN'S ARTICULATED SKELETON.

Plate. III.



Dr. ALLEN THOMSON'S
CASE OF TRANSPOSITION OF THE VISCERA.

THE

GLASGOW MEDICAL JOURNAL.

VOL. I.] JULY, 1853. [No. 2.

ORIGINAL COMMUNICATIONS.

I. *Case of Pregnancy complicated with Carcinoma of the Uterus, in which Gestation was prolonged to the Seventeenth Month.* By P. RAE MENZIES, M.D., L.R.C.S., Edinburgh, late one of the Medical Officers of the City Parish of Glasgow. (Read before the Glasgow Medical Society, February 15th, 1853.)

I HAVE been induced to bring the following remarkable case under the notice of this Society, not on account of its rarity alone, but in the hope that those members who may have seen cases similar in nature, and in the difficulties attending their treatment, may be able to furnish such information and counsel, as may assist in securing a more fortunate issue to those cases that may hereafter be met with.

Towards the end of February, 1852, I was requested to visit Mrs. S——, residing in Provanmill Road. She was a tall spare woman, about 28 years of age, had been married five years, and was the mother of one child. She was of a somewhat sallow complexion, with black hair and eyes. She informed me that she expected her accouchement to take place very soon, and had thought indeed that it would have been past ere now. She complained of an acute pain in the upper part of the left inguinal region, which had attacked her three days previously, had been constant since, was aggravated by every movement, and compelled her to maintain the supine posture. Its site was very tender to the touch, but free of swelling, and there was nothing observed in the general appearance of the abdomen, different from what is usually present near the termination of pregnancy. The countenance was anxious; tongue dry and covered with a thin white fur; pulse 104; skin warm and dry; bowels confined.

Leeches were applied to the painful spot, and followed by a terebinthinate epithem; while five grains of calomel, succeeded by castor oil and tincture of hyoscyamus, were administered internally. Next day she was considerably improved; the epithem was repeated, and two days afterwards she was left with instructions to attend to the state of the bowels, and to make as little exertion as possible.

I heard no more of my patient until the end of March, when I received a message that she was in labour. I found her in bed complaining of intermittent pains, commencing in the centre of the abdomen, extending to the back, and thence towards the hypogastrium. They had begun nearly twenty hours before, but had not been frequent. The uterine tumour was very prominent, giving a broad flattened appearance to her sides: very firm to the touch, it did not become firmer during the pains. It still reached to the epigastrium, although it had apparently prolapsed somewhat since my previous attendance. The os uteri was quite closed, its anterior and posterior labia being firm and uninfluenced by the action of the pains. The vagina was moist and cool. The countenance betrayed considerable anxiety; the pulse was frequent and rather weak, and the tongue furred. She was ordered some oil, which acted before I called in the evening, but no progress was made in the labour, nor were matters more promising next morning. Being doubtful of her calculation regarding the duration of her pregnancy, I made more minute enquiry and ascertained the following particulars.

About the end of April or beginning of May, 1851, while nursing her former child—a fine boy then twelve months old—she menstruated for the first time since she had become pregnant of him, and a month afterwards weaned him without the return of the menses. She had miscarried before the conception of this child. During her present pregnancy she had remarked nothing unusual until the middle of February, at which period she observed that the motions of the child, which had been much more turbulent than in the former pregnancy, ceased altogether to annoy her; that there was a sense of weight and coldness in the abdomen, and that the breasts, which had previously been large and plump, became small and flaccid. She was not certain when she *first* felt the fœtal movements, but was quite sure they were present in October, 1851.

The abdominal tumour was very prominent, and of a well-defined ovoid form; firm, though fluctuating; when undisturbed, situated exactly in the median line, but readily admitting of lateral movement. From all parts of it, percussion elicited a dull sound. Auscultation, carefully repeated on several successive days, and subsequently at longer intervals, failed to detect either the placental *souffle*, or the sounds of the fœtal heart's action. Per vaginam, the uterus and its contents felt firm and elastic. An attempt to discover the fœtal head through its anterior wall was unsuccessful. The urine was passed with ease, but the bowels were still inclined to constipation, and defæcation was performed with pain and difficulty. The breasts were flaccid and destitute of milk, the areola around the nipples was, however, well marked and studded with numerous enlarged papillæ. She had been the subject of dyspepsia for many years, and now the stomach was very irritable, and the anorexia complete.

The abdominal and dorsal pains had been more severe and frequent during the night, and continued throughout the day, without any effect on the os uteri, although the lower part of that organ descended under their action a little farther into the pelvis. A sedative was administered at bedtime, with the effect of procuring her some refreshing sleep during the night. In the morning the pains again increased, and as the gastric irritation was now much relieved, and her strength somewhat improved, I resolved to try small and frequently-repeated doses of tartrate of antimony. To aid this remedy in relaxing the genital passages, fomentations—previously ordered to be applied to the vulva—were continued, and a large emollient enema administered. The antimony produced considerable general relaxation, but had no effect on the os uteri. During the succeeding night there was little change; and on the evening of the next day—the fourth of my present attendance—she was so much exhausted that it was necessary to repeat the anodyne. The exact duration of her pregnancy being still not fully determined, I did not consider it proper to adopt any other measures at that time with the view of hastening delivery; and, as her general condition had begun to improve, while the pains, which had never been strong, gradually became less frequent, I resolved to wait until labour should set in more energetically.

From that time till near the end of April, the local and constitutional irritation continued to diminish; but in the latter part of that month the pains became again more active and accompanied with a greater feeling of bearing down. The uterus too, descended farther into the pelvic cavity, but examination of its os convinced me that it still possessed an equal if not greater amount of hardness and resistance. Its margins were, however, a little more apart, and allowed the point of the finger to be introduced about a third of an inch into the intervening fissure. A female catheter was introduced more than an inch backwards and upwards, without the discharge of the liquor amnii, and with the loss of only a few drops of blood. I now determined to attempt the dilatation of the os with sponge tents, and accordingly introduced a very narrow one a short distance next day. About five hours after its insertion, there was a sudden discharge of nearly twelve ounces of blood; and, on examination, I discovered a nodulated flattened mass of semicartilaginous density, overlapping the anterior margin of the os. I feared this might be the placenta rendered unusually dense and firm by some morbid process. The vagina was plugged, and cold applied to the vulva. The bleeding soon ceased, but the pains, which continued considerable for two days longer, produced no effect upon the os.

I now asked Dr. James Paterson, Professor of Midwifery in Anderson's University, to see my patient. He was of opinion that the small flat mass, attached to the upper surface of the os, was more probably a foreign growth or tumour, than a diseased placenta. The complexion of the patient, which had now assumed a more dusky sallow tint, and her general debility, gave probability to the existence of malignant disease. He advised that, as the fœtus was evidently dead, I should wait as long as no symptoms of immediate danger arose, and be content with sustaining her strength by tonics and nourishing food, and procuring rest by occasional anodynes.

About a week afterwards, an attentive examination convinced me that the cervix uteri had not been completely obliterated; that the finger had never penetrated farther than the small portion of its cavity remaining; and that what resembled a diseased placenta was the anterior margin of its internal orifice, thickened, hardened, and tuberculated by an interstitial deposit. There was no vaginal discharge, no fetor, and I could feel nothing like an ulcerated surface. No examination with the speculum was at that time permitted.

Digestion being much impaired, with great tendency to acidity, carbonate of ammonia was given in infusion of columba, and the bowels regulated by an occasional pill. Still her digestive organs remained weak and irritable, and she gradually lost flesh and strength. She frequently had tenderness of the epigastrium and other regions of the abdomen, which was generally removed by sinapisms or terebinthinate applications.

At that time uterine action had in a great measure subsided. During the next five months it suffered augmentation at irregular intervals, but never attained the strength it had previously possessed. The pains were present every day, becoming aggravated towards evening, and frequently causing the patient to take a nocturnal dose of morphia and conium. They gradually became of a more mixed character; lancinating pains shooting from the hypogastrium to the sacrum, and others travelling in the course of the crural and sciatic nerves, being added to those of a bearing down nature. For two months prior to the termination of her illness, she complained of a constant feeling of weakness, heat, and dragging pain in the loins, which rendered her incapable of remaining long in the sedentary posture.

The uterine tumour gradually receded from the epigastrium, and became smaller, firmer, and less fluctuating. Its resistance became unequal, apparently from the more prominent members of the fœtus being pressed against the uterine walls. It continued slowly and almost imperceptibly to descend in the pelvis, until the os was within an inch of the perineum, yet there was little inconvenience felt in passing urine. Defæcation, however, was long difficult, and painful. The breasts, which had been so flaccid and destitute of their life-supporting fluid, became, in the month of June, somewhat more plump, and resumed their secernent function to such an extent during the remainder of her illness, as to keep her linen constantly wet with the milk they spontaneously discharged.

On the 3d of November, I received a message to visit her. Being unwell, my friend Mr. M'Gill went in my stead. He found her suffering from symptoms of subacute peritonitis. She complained of great pain and tenderness in the upper part of the abdomen. There was much thirst and vomiting: the bowels had not been moved for some days: the pulse was rapid, and the skin hot and dry. With the aid of leeches, turpentine epithems, enemata, mercurials and sedative anodynes, these symptoms were relieved; but they soon returned, and she sank on the 17th of the month.

During the attack of peritonitis, Dr. Paterson again saw her with Mr. M'Gill, and on that occasion, examined the condition of the uterus, I believe, with both the speculum and sound. With the former no ulceration was discovered; and the latter was passed an inch and half through the os. He expressed doubts of the existence of a fœtus in the womb, considered the condition of the woman hopeless, and that no operative interference could be of any service.

Being from home when she died, the only time left for the post mortem examination was an hour prior to that appointed for the interment of the body; and from being myself unwell, and unable, though present, to assist Mr. M'Gill, it was unfortunately hurried and imperfect.

The body appeared well formed, but much emaciated. On incising the abdominal parietes a considerable quantity of gas escaped, and about eight ounces of serum, turbid with flocculi of lymph, were found in the peritoneal cavity. The peritoneum was deeply congested and roughened with numerous minute patches of lymph. The inflammation had extended over the whole of the peritoneum, but had evidently been most intense where it covers the fundus uteri, as evinced by the deeper shade of the injection, and the thicker coating of lymph found there. A vertical incision into the anterior wall of that organ, gave exit to a small quantity of excessively fetid gas, and disclosed the head and shoulders of a fœtus, the breech of which was contained in the lower part of the viscus that lay in the true pelvis. The child was closely embraced by the walls of the uterus; the liquor amnii having been so much absorbed that it came into immediate relation with them; and the vertex was so flattened, by the action of the muscular fibres of the fundus, that it conferred a cuboid form on the whole cranium. The fœtus was a well-formed male that had apparently arrived at or near to maturity. Its hair and nails were quite perfect. It had undergone no decomposition; the skin, with its firmly-adhering cuticle, being seen of a perfectly normal colour, when freed of the large quantity of smegma and debris of the liquor amnii, with which it was covered. The umbilical cord seemed to have been quite healthy, though now tinged with the green hue of commencing putrefaction. The placenta, which was easily detached from the upper part of the left uterine wall, was deeply injected and of a much denser consistence than usual. It contained no coagula, was circular in form, and was bounded by an abrupt edge, as completely deprived of its membranes as if they had been carefully removed with the scalpel. The involucra appeared to have been entirely absorbed, with the exception of some debris, which assisted in thickening the small quantity of fluid that remained in the uterus.

This liquid, in quantity about ten ounces, was thick and very turbid, of a dirty yellowish-brown colour, and abominably fetid. The internal surface of the uterus presented its mucous lining uncovered by any other tissue, much softened, and its capillaries and veins deeply injected with dark-coloured blood. For the purpose of examining the condition of this organ more minutely, Mr. M'Gill removed it and the upper part of the vagina from the adjacent structures. Its orifice barely admitted a goose-quill, and was filled with a thick soft matter which had prevented the escape of the fluid from its cavity. The circumference of this internal orifice consisted of a remarkably firm and tough ring, as hard as cartilage, thicker in its anterior than in its posterior half, of a pale bluish-white colour, and offering great resistance to the knife. The same dense tissue extended continuously through the lower fourth of the body of the organ, gradually diminishing in thickness as it ascended. It was continued as far as the upper fourth, in patches infiltrated into the muscular and areolar tissues, rendering the walls very unequal, both in thickness and consistence. In the lower fourth the muscular fibres were so much atrophied that they were scarcely discernible. In the middle half they were much more evident; while in the fundus they were abundant and communicated to it a much deeper tint. Under strong pressure, a segment of the dense tissue yielded a small quantity of opalescent fluid, which the microscope showed to contain a quantity of granular matter, and a few nucleated and granular cells of irregular shape, some being nearly spherical, while others were candate or fusiform. None of the other viscera were examined.

In reviewing the history of this case, it must be evident that the woman's own computation of the period of conception, viz. May, 1851—her certainty of having felt the turbulent movements of the child in October of the same year—the simultaneous cessation of these, of the growth of the abdomen, and of the mammary secretion in February, 1852 — the more positive stethoscopic evidence of the death of the fœtus obtained in the end of March—the gradual decrease in the size of the abdomen afterwards, and the presence of a full-grown child in the uterus, seven and a-half months after the stethoscopic examination, incontestably prove that she had attained the middle of the seventeenth month of pregnancy at least, although it is more probable that she was in the eighteenth.

With reference to the *causes* of so extraordinary an increase in the duration of pregnancy, I may remark that many cases of gestation prolonged beyond the tenth month are on record; but, with one or two exceptions, all are characterized by the absence of the ovum from the uterine cavity, and its presence in some other part of the body. Thus a child may be born with a cyst in its body containing its twin brother or sister, and it may survive several years in that condition. Again, there are numerous examples of extra-uterine pregnancy where the mother has lived many years, unrelieved of the fœtus, whose presence has at last induced suppuration in the maternal structures, and caused its extrusion through the abdominal parietes, the large intestine, the vagina, or the bladder. Those curious instances of gestation called *interstitial uterine*, in which the ovum is lodged between the tunics of the uterus, and of which I have found seven only on record, do not seem likely to prove causes of prolonged pregnancy, all yet observed having terminated fatally in the earlier months, by rupture of the viscus and hæmorrhage. In 1814, Mr. Lawrence read to the Medico-Chirurgical Society of London the particulars of a case that occurred in the practice of Mr. Roger and Dr. Cheston of Gloucester, in which an ovum had reached the uterus in the ordinary way, arrived at maturity there, and was on the point of being expelled by parturition, when—some impediment existing to the completion of the process, which Mr. Roger proposed to overcome by instrumental aid—it receded, escaped from the uterine cavity, and became enclosed in an osseous cyst imbedded in the fundus, where it remained fifty-two years. Accidents of this kind must be exceedingly rare, yet Dr. Bartholomew Patuna relates a similar example of escape of the fœtus, while its involucra remained in the cavity, the parent surviving undelivered a long time afterwards.

Another cause of prolonged pregnancy, and it is the only one, so far as I am aware, which has yet been shown to have caused great increase in the duration of true intra-uterine gestation, is a carcinomatous condition of the os and cervix uteri. An instance of this is recorded in a recent number of one of our periodicals, in which the fœtus was gradually expelled in fragments, during the three months following the ordinary term of pregnancy; and I believe the case I have related to-night is another example of the same effect of cancer. That this, however, is a rare consequence of malignant disease, is sufficiently proved by the circumstance that of thirty cases of this complication of pregnancy collected by Puchelt, and twenty recorded since, all of which had reached the full period, it occurred in one only. Besides the abnormal duration of pregnancy in the case of Mrs. S., it is remarkable for the length of time the adventitious structure had been deposited, and the extent to which it had implicated the body of the organ, without ulceration of the os and cervix. To the atrophy of the muscular tissue we must attribute the weakness of the uterine contractions; and to the unyielding condensation and thickening of the lower part of the uterus, the great resistance to these efforts at delivery was evidently due. The suppression of the milk at the apparent time of the child's death, and its restoration after the ordinary period of labour had passed, are also well worthy attention. Was its increased flow, during the time usually occupied by suckling, a natural effort to establish this last stage of the generative process, in a case where a preceding stage had never been completed? Or was it, as I am inclined to believe, merely a result of the continued irritation of the uterus in a female who had already been a mother?

That conception can be accomplished, while the os and cervix uteri are the seat of open or incipient cancer, notwithstanding the frequency of watery or sanguineous discharges, has been long known; and that it is by no means an unfrequent occurrence, is amply demonstrated by the fact, that of 120 cases of carcinoma treated by Dr. Lever at Guy's Hospital, 40 per cent. had aborted. Further, that the womb should be capable of retaining and nourishing the ovum until the usual period of expulsion, while its mouth and great part of its neck are destroyed by malignant ulceration, is not more astonishing than undoubtedly true. Labour under these circumstances, always difficult and tedious, presents very unfavourable results. The *prognosis*, with respect to the life of the mother, will depend on the stage of growth, the extent, and the seat of the scirrhous formation, together with the condition of the patient's constitutional powers. If the deposit is small and affecting a portion only of the uterine cervix, or existing in the form of small isolated tubercles, and the woman's strength not much diminished, labour will generally be accomplished without aid, although the process may be much impeded by the presence of such a tumour. And even when instrumental aid is required in the extraction of the child, women will frequently rally from the shock of parturition, to die, sooner or later, of the malignant disease. Although labour generally hastens considerably the destructive operations of the disease; yet, when the tumour is small and suffers little compression during the process, it may progress as slowly after as before parturition. When the obstacle to the transmission of the child is insurmountable, rupture of the uterus often takes place during powerful contractile efforts. This unfortunate event has occurred in nearly one-fourth of all the cases recently published. Of Puchelt's thirty cases of cancer, and seven of cauliflower excresence with pregnancy, five died undelivered, four of them with ruptured uterus. Of the thirty-two in whom delivery was effected by the efforts of nature alone or aided by art, sixteen were lost during or soon after labour; thirteen survived their confinement; and of three the issue is unknown. Of twenty cases, gone to the full term of pregnancy, and four at the end of the seventh month, published since the date of Puchelt's collection, I find that four died undelivered; ten within the puerperal month; and of the ten that survived longer, labour occurred in one at the end of the seventh month, and in five the disease implicated only a portion of the circumference of the os, being limited to the anterior lip in three, to the posterior in another, and two-thirds of its circumference were involved in the fifth. In one of those, where the disease was confined to the anterior limbus, it consisted merely of four or five small tubercles, and the subject of it recovered from three successive labours, in which she bore two living and one dead child. In three of these twenty-four cases the cervix was lacerated; in one a large *disc* was detached from the lower part of the uterus during parturition, and the mother survived six months; in two the body of the uterus gave way, and the patients died soon after delivery; and in another rupture produced death before delivery could be effected.

The consequences to the children were scarcely less disastrous, as will be readily understood, when we consider the great amount of compression the head must undergo in passing through the unyielding outlet. Of Puchelt's thirty-seven cases, after rejecting five in which no account of the child's viability is given, ten only were born alive, seventeen were still-born, and five undelivered. From the twenty-four cases previously referred to twenty-six children resulted, of whom eight were alive, eleven were still-born, in addition to four undelivered, and of three the fate is omitted. Of the eight born alive, in one alone of the mothers had the disease encircled the os uteri, thus showing that a limitation of it to one side is much more favourable to the life of the offspring as well as to that of the parent.

When we turn our attention to the *treatment* of this awkward combination, we find it embarrassing in the extreme; nor are the difficulties much lessened by writers on the subject, so multifarious and discordant are the modes of management advised. Let us shortly review the various practices adopted, and endeavour to assign to each the cases most proper for its employment.

1st. *Induction of Premature Labour.*—As cases of death during labour before the end of the seventh month are exceedingly rare, although the combination of abortion with cancer is far from being uncommon, we might suppose that the adoption of means to procure the expulsion of the ovum before that period would, in many cases, form the appropriate treatment. Accordingly, we find several eminent obstetricians advocating the practice. Dr. Robert Lee says emphatically, "If abortion do not take place, where pregnancy exists with cancer of the os uteri in an advanced stage, the membranes of the ovum should be perforated, and at the seventh and a-half month, if the disease is less extensive." But there are serious objections to following this counsel in all cases. It will frequently be found that the cervix is so narrowed or entirely obliterated by the cancerous deposit, that the membranes cannot be reached without inflicting such laceration and contusion as may induce hæmorrhage or inflammation. If the disease is extensive, the contraction great, and pregnancy advanced to the seventh month, delivery must be accomplished with such difficulty and danger, as should cause us to hesitate in accelerating a crisis, whereby our patient may be deprived of two months at least of her existence. It is, moreover, a well-established fact that parturition accelerates the distinctive action of the disease, while pregnancy appears to impede it; hence in cancer far advanced, where great loss of structure has rendered the os more patent, and the passage of the head *comparatively* easy, premature delivery would likewise hasten the fatal issue. I think, however, that in some cases where the scirrhus has not made much progress, Dr. Kiwisch's plan of inducing abortion, as modified by Dr. Tyler Smith, would afford us a means of prolonging life, further than would be attained by allowing the pregnancy to be matured.

But supposing we are not consulted until labour has commenced, or that we were previously aware of the complication and thought it more prudent not to interfere, what are we to do when the uterine efforts are inadequate to overcome the obstacle to delivery? If the contractions are powerful and we delay too long, rupture of the uterus and death will soon terminate our patient's sufferings; or the cervix may be rent; or a large segment of the inferior portion of the organ detached, followed by the expulsion of the child. If the constitutional powers are already much depressed, the uterine contractions may be comparatively feeble, and the woman die of exhaustion. To avoid such lamentable events various operations have been proposed and performed.

Version has been used in several instances; but in all with the loss of both mother and child. When we reflect on the violence necessarily inflicted in passing the hand through the rigid os uteri, and the great force required to extract the child, the uniformity of the fatal result cannot surprise us. Nor can the child fare better. Delivery by the feet being always attended with the loss of a large proportion of the children, can we expect any of them to survive, after being dragged with unjustifiable force through such unyielding and contracted passages? The compression sustained by the head and funis will inevitably destroy their vitality.

The forceps have been employed successfully for both mother and child; but their use is limited to that class of cases, in which a part only of the os is affected, many of which have done well without interference. In one case in which the *vectis* was used, the vagina was ruptured, although the fœtus had only arrived at the end of the seventh month.

Craniotomy and *embryotomy* have their advocates, and have been repeatedly performed. Of the twenty-four cases formerly mentioned, the former operation was had recourse to in three, and the latter in two. One woman died immediately, and another in two days after craniotomy, while a third survived the operation a month. One died during the performance of embryotomy, the other survived; fragments of the fœtus being discharged from the uterus during the ensuing three months. The circumstances in which these operations appear to me most necessary and applicable are, the presence of a very thick and inelastic deposit, a tolerably patent os, and a well-formed pelvis, while the patient's strength is not exhausted, though uterine contractions are well sustained, and the fœtus is dead. As cases having many of these circumstances combined must be rare, and as the performance of craniotomy, when the os is much contracted or the patient already very feeble, has invariably led to a fatal issue, we must look for other means of effecting delivery. These are excision of the tumour, incision of the uterine cervix, and gastrotomy.

Excision is suitable for those cases only, in which the condensation is confined to a portion of the orifice, and hence has seldom been employed. Mr. J. M. Arnott excised a malignant tumour of the anterior margin during labour; a living child was soon expelled, and the mother survived sixteen months.

Incisions through the cervix were made in one only of the twenty-four cases. The woman had been ill for three days; she was very much exhausted, and her pulse very rapid. Two or three small incisions in the cervix allowed the head to pass, and the delivery was completed in five pains. The patient, however, never rallied from the previous exhaustion, and died in three days. Dr. Simpson, who relates the case, incised a carcinomatous mass in the vagina of another woman, who was then delivered of a living child by the forceps, and survived the labour two years. Incisions having frequently been successful, when the completion of labour was prevented by non-malignant induration of the os and cervix, we should expect them to be useful in malignant hardening also, provided the thickening of the parts be not excessive, and the patient's strength not too far exhausted. Naegelé, Ashwell, Lever, Lee, Davies, Gooch, Baudelocque, Simpson, and others, have written in commendation of them, and probably many of the cases recorded in which death ensued from rupture, might have terminated less unhappily if cervical section had been performed. Dr. Oldham and some others say, they are only applicable in the early stage of the disease, and that in the later we must have recourse to craniotomy or the cæsarian section. But, seeing that laceration of the cervix and os necessarily occur, under the expulsive efforts before the child can pass, why should we not imitate nature in her mode of successfully overcoming the unwonted obstacle, and, by dividing the hardened tissues, while the patient's strength is good, give her a better chance of survival? Should a case similar to that whose main features I have had the honour of laying before this Society, ever be presented to me again, I should be much inclined to make a crucial incision into the neck of the womb,* provided the contractions appeared sufficiently strong to prevent hæmorrhage following the removal of the placenta. I fear, however, there would be considerable risk of this, on account of the atrophy of the muscular fibres.

The *cæsarian section* has never been performed, so far as I am aware, on account of cancer of the uterus. Yet there may be cases in which, from the extreme exhaustion of the patient, or excessive thickness of the malignant deposit, neither craniotomy nor vaginal section can afford us any prospect of relief; and it may become our duty, if the action of the fœtal heart is still audible, to perform this operation.

As connected with this subject, I annex the particulars, in a tabular form, of twenty-seven cases of labour complicated with cancer of the uterus, which have occurred in the practice of various accoucheurs. The table shows the species and situation of the disease, the duration of the labour, and the result to mother and child, with a few general remarks upon each case.

---

* By directing two of the arms of the cross obliquely forwards, and the other two obliquely backwards, any risk there may be of hæmorrhage from division of the uterine arteries will be avoided.

Table of Twenty-Seven Cases of Labour after the Seventh Month, complicated with Cancer of the Uterus.

No.	Authority.	Previous Labours.	Species of Cancer, and its Site.	Duration of Labour.	RESULT.		REMARKS.
					To Mother.	To Child.	
1	Dr. Lever,	Eleven,	Carcinoma of anterior margin,	Unknown,	Recovered,	Alive,	Ulceration supervened soon afterwards.
2	do.	Seven,	do. of posterior do.	60 hours,	do.	do.	Malignant disease, increased rapidly after labour.
3	do.	Two,	do. of anterior do.	6 do.	do.	do.	Disease consisted only of four or five very small tubercles.
4	do.	Three,	do. do.	14 do.	do.	Dead,	Same patient, tubercles larger.
5	do.	Four,	do. do.	7 do.	do.	Alive,	do. disease more advanced.
6	Mr. Butler,	..	do of ⅔ds of circumference,	84 do.	do.	do.	Delivered with the forceps.
7	Dr. Lever,	One,	Ulcerated encephaloid of whole os uteri,	50 do.	Survived six months,	Dead,	Hæmorrhage during pregnancy. Large disc containing os and cervix detached during labour.
8	Dr. J. Miller, jun. of Hamilton,	Seven,	Ulcerated carcinoma of whole os and cervix,	Uncertain	Died undelivered,	do.	Sank exhausted from peritonitis, without very evident uterine contractions having occurred.
9	Dr. J. M. Arnott,	Several,	Carcinomatous tumour on anterior margin of os,	48 hours,	Survived sixteen months,	Alive,	Excision of tumour. Labour rapidly completed afterwards.
10	Dr. H. Oldham,	Four,	Ulcertd. carcinoma of cervix,	20 do.	Died undelivered,	Dead,	Uterus ruptured during labour.
11	do.	..	do. do.	12 do.	Survived one month,	do.	Craniotomy. Low peritonitis succeeded delivery.
12	do.	Twelve,	do. of do. and posterior wall of vagina,	..	Survived two months,	Putrescent,	Disease far advanced.
13	Drs. Simpson and Barry,	..	do. of cervix and os,	72 do.	Died in three days,	....	Incisions in cervix. Never rallied from the collapse which was present before incising.
14	Dr. Lee,	..	do. of do.	40 do.	Died next day,	Dead,	Cervix lacerated. Craniotomy. [month.
15	do.	..	do. of do.	..	Dead,	do.	Vectis. Cervix lacerated. Pregnancy only at end of 7th
16	do.	..	Ulcerated encephaloid of do.	..	Survived six months,	do.	End of seventh month of pregnancy.
17	Mr. J. Brown,	..	Ulcerated carcinoma of os and cervix,	44 do.	Died very soon afterwards,	do.	Delivery by turning at the end of seventh month. Death from the exhaustion induced during labour.
18	Dr. Routh,	..	do. of do.	90 do.	Died in five days,	do.	Delivery through uterine wall. Death from peritonitis.
19	Dr. Merriman,	..	Ulcerated encephaloid of os,	..	Died in six weeks,	Alive,	Cervix lacerated.
20	do.	..	Carcinoma of part of os,	..	Dead,	do.	
21	Dr. Ramsbotham,	..		..	Died undelivered,	Dead,	
22	do.	..		..	Died in two weeks,	....	Labour premature.
23	Dr. H. Davies,	..	Carcinoma of cervix,	..	Died immedtly. after delivery,	....	Uterus ruptured.
24	Dr. Denman,	..	Encephaloid,	..	Died during delivery,	Dead,	Embryotomy.
25		..	Ulcerated carcinoma of cervix,	..	Recovered,	do.	Embryotomy. Fœtus expelled in fragments during ensuing three months.
26	Dr. Simpson,	..	do. do.	..	Died in two days,	do.	Craniotomy.
27	Dr. Menzies,	One,	Carcinoma of lower fourth of uterus,	..	Died undelivered,	do.	Continued to live until the seventeenth month, without the rigid os yielding to the feeble muscular efforts. Died of low peritonitis.

II. *Case of Diseased Ovarium, in which Ovariotomy was performed by W. Lyon, Esq.* Reported, with Remarks, by James H. Howie, M.D., Row, late House Surgeon, Glasgow Royal Infirmary.

Mary D——, aged 31, a worker in a factory, and unmarried, was admitted into the Glasgow Infirmary on the 18th of March, 1850.

About two years previous to admission, patient observed some swelling of the abdomen for which she could assign no cause; she is not sensible that it arose first on either side. It slowly increased in size, and about a year after its first appearance, she was treated for her complaint in the medical wards of the Infirmary, but without any appreciable benefit. Hitherto she had not experienced any disagreeable symptom, except inconvenience from the size of the tumour.

Shortly after her dismissal from hospital, she began to suffer severe pain in the situation of the swelling, which at that time was not of so great size as to produce much constitutional disturbance. She states that the pain was at once relieved by tapping, which was performed four months after her dismissal from hospital, or about sixteen months from the commencement of her complaint. A large quantity of brown-coloured oily-looking fluid was evacuated. The swelling, however, soon began to re-appear, and increased in about five months to as great a size as it had formerly attained. At the expiry of this period, or about three months previous to admission, she was tapped a second time.

On admission, the fluid is found to have re-accumulated, and patient states that the swelling of the abdomen is now as great as it was before she was tapped. Fluctuation is distinct all over abdomen, and percussion dull. In right iliac fossa, a large, round, moveable, and elastic tumour can be distinctly felt: fluctuation is also perceptible in it, although it is much less distinct than in other parts of the abdomen. As felt, *per vaginam*, the tumour is very easily moved, and is smooth and elastic to the touch. She has not much dyspnœa, neither has she any pain or derangement of the functions of the abdominal viscera. She has menstruated quite regularly for many years. She complains, however, of some cough with which she has been troubled for some time past. Percussion of chest, normally clear. Respiratory murmur, harsh, and accompanied in several situations by loud sonorous ronchi. Her general health has for some time past been indifferent; she is in person rather thin, but her aspect is good and cheerful.

March 20.—Was shown to-day to a consultation; the majority of the members of which were of opinion, that *paracentesis abdominis* should be performed, and the fluid withdrawn, in order that a more accurate diagnosis of the nature and connexions of the tumour might be made. This was accordingly done, and about a gallon and a-half imperial of a viscid straw-coloured oily-looking fluid was removed. It was highly albuminous, and had a specific gravity of 1·014.

The abdominal parietes were, as might be expected, a good deal collapsed after the evacuation of the fluid, and the tumour, which before the tapping was felt situated in right iliac fossa, was now deeper in the pelvic cavity, but perfectly moveable, and could, owing to the relaxed state of the abdomen, be almost insulated by the fingers inserted under it.

The consultation was now of opinion that this was a favourable case for operative interference, and decided that the tumour should be extirpated by one of the usual operations, allowing, however, a few days to elapse to see whether or not the fluid should reaccumulate. The circumference of abdomen before tapping was 34 inches; after tapping 28 inches.

Patient, at her own desire, left the hospital for a short time after being tapped, and was visited regularly as an out-patient. A week after leaving, she began to suffer a good deal of pain in the abdomen in the situation of the tumour, and as the swelling was obviously increasing, she was advised to return to the hospital, which she did.

April 5.—The fluid has rapidly re-accumulated since the tapping, and for the last eight or ten days she has complained of considerable pain in the abdomen, and has had occasional fits of retching. These symptoms have been relieved by the administration of opiates and prussic acid.

At her own request, and after the importance as well as the danger of the operation had been fully explained to her, the tumour was skilfully extirpated to-day by Mr. Lyon, assisted by Drs. M. S. Buchanan, Lawrie, Weir, &c. At 2 P.M., she was comfortably laid upon a table, in a large and airy room, the temperature of which was raised to 70° Fahr. Having been put under the influence of chloroform, an incision three inches in length was made in the *linea alba* from the umbilicus downwards. When the tumour was exposed, several small cysts were punctured, and their contents allowed to escape. It was then found to be adherent, to a slight extent, above and around the umbilicus. The largest cyst, which filled and distended the abdominal cavity, was now punctured, and a great quantity of sero-purulent matter was discharged. In consequence of the evacuation of the contents of the cyst, and the external opening having been somewhat enlarged, the adhesions to the peritoneum lining the anterior wall of the abdomen were reached with the finger, and separated, though with some difficulty. The whole of the sac was then easily drawn out of the abdomen; two short ligatures were tied firmly around the pedicle, which was about an inch in breadth and half an inch in thickness; it was then cut a little above the ligatures and the sac removed. A sponge was used gently for the purpose of removing a small quantity of the contents of the large cyst which had escaped into the abdominal cavity. The wound was closed by three or four stitches, and by straps of adhesive plaster, after which a light compress was applied over it, and a broad bandage put round the abdomen. *To have immediately a small starch enema with two drachms of laudanum.* At 11 P.M. it is reported that patient has been asleep since the operation, and she now expresses herself to be quite comfortable and free from pain. Pulse 98, fair strength. *The anodyne enema to be repeated.*

April 6, 6 A.M.—Has passed on the whole a good night, though occasionally disturbed by cough. Pulse 114, soft, and of good strength; tongue moist; respiration normal. Is still quite free from pain.

11 A.M.—Is somewhat drowsy. Complains only of weakness. Pulse 120, soft. *To have two teaspoonfuls of wine every half-hour.*

2 P.M.—Much the same as at last report. Pulse rather weaker. Pupils slightly contracted. *To have half an ounce of whisky every half-hour.*

4 P.M.—Patient is now evidently sinking; respiration laborious; extremities cold; pulse almost imperceptible. Death at 7 P.M.

Inspection of the body 30 *hours after death.*—The edges of the incision in the abdominal parietes were slightly adherent in consequence of the effusion of a small portion of lymph. About six ounces of sero-sanguinolent fluid, mixed with a little pus, were found in the abdominal cavity. The small intestines were slightly glued together by recent effusion of lymph, and presented on their peritoneal surface numerous congested patches. The omentum was likewise adherent to the intestines, and to the peritoneum lining the anterior wall of abdomen. All around the umbilicus, the peritoneum had a congested and ecchymosed appearance, and in some situations slight laceration of the peritoneum and effusion of blood were observed. The uterus and left ovary were quite healthy. Other organs not examined.

The tumour at first sight seemed to furnish examples both of the multilocular and unilocular varieties of ovarian dropsy, but, on more minute inspection, it was seen to consist of a large unilocular cyst, with a cluster of smaller cysts springing from its interior, a little beyond its origin from the pedicle, and covered by its lining membrane. This aggregation of cysts formed a globular mass of considerable size, and was evidently that which had been felt during life in right iliac fossa, both before and after patient had been tapped. The unilocular cyst was so large, that when filled with fluid, it would cause very considerable distension of the abdomen. Its lining membrane was highly vascular in some situations, but was, for the most part, coated with recent lymph. It contained, as has been already mentioned, a large quantity of sero-purulent matter, the greater part of which had to be evacuated before the sac could be drawn out of the abdomen. The thick pedicle of the tumour had its origin in the broad ligament of the right side.

Remarks.—The difficulty of diagnosis in this case was considerable, and it was only after the great bulk of the fluid had been removed, that the consultation adopted that view of the case which was confirmed by the examination of the sac after its extirpation, and which inclined them to think, that this was upon the whole a favourable case for the performance of ovariotomy; and they saw no reason why the patient's earnest desire to have the operation performed, should not in this instance be complied with.

The operation itself, it will be observed, was a modification of Mr. Lizars' operation by the long incision, revived some years ago by Dr. Clay of Manchester, and the operation of Mr. Jeaffreson performed by means of the short incision. The reasons which influenced Mr. Lyon in this procedure, were chiefly, I have reason to believe, that while he thought it necessary to make a somewhat larger incision than that recommended by Mr. Jeaffreson, he presumed that the chances of recovery would be greater with an incision of three or four inches in length, than with one extending from the sternum to the pubis; and, it was evident that an incision of the former size could with perfect facility be converted, if necessary, into one of the latter. When the abdominal cavity was opened, the globular aggregation of cysts towards the origin of the tumour presented, and all attempts to empty it by puncture proved ineffectual; by pressing it a little aside, the large sac was punctured and emptied of its contents, after which the operation was finished in the usual manner.

Although the patient's health was scarcely so good when the operation was performed, as when she first entered the hospital, still, it was quite good enough to warrant the performance of the operation with the prospect of a probably successful result. She laboured under no discoverable disease at the time, with the exception of slight chronic bronchitis. Death, however, resulted within thirty hours after the operation. The post mortem examination shows that in a very short time peritonitis had ensued, although it may reasonably be supposed, that the shock of the operation, which necessarily included the exposure of such a large serous cavity, and the injury to the peritoneum in separating the adhesion of the sac, also contributed very much to hasten the fatal result. That the patient did not complain of any pain in the abdomen after the operation, although the products of inflammatory action were found after death, may be accounted for by her having been kept slightly under the influence of opium for twenty-four hours. It is certain that the rapid sinking was not in the least attributable to hæmorrhage during the operation or after it, for there were not more than two ounces of blood lost altogether. When it is considered that an interval of more than a fortnight intervened between the tapping and the performance of the operation, and that at the time of tapping the tumour was perfectly moveable, there is good reason for supposing that the adhesions were formed after the tapping. For ten or twelve days prior to the operation, patient had a good deal of pain in the tumour, and its contents and the appearance of its lining membrane were evidently the result of recent inflammatory action. In all probability, therefore, the chance of recovery would have been better had the operation been performed *immediately* after the tapping.

In cases in which it is doubtful from which side the tumour springs, the performance of tapping, by causing the collapse of the cyst and its subsequent retraction upon its pedicle, might determine on which side of the median line, what has been termed the "exploratory diagnostic incision," should be made, with the best chance of discovering the existence of adhesions and their extent; for, as far as our present statistics show,* slight adhesion, as in the case we have recorded, would not seem to be an insurmountable barrier to the extirpation of the tumour, with a chance of a successful issue. It has been considered, and justly so, a matter of reproach to our profession, that in an operation of such magnitude and importance, all the successful cases have been recorded, while many of the unsuccessful have been unnoticed, because unpublished. The consideration that in this respect we are "debtors to our profession" has led the reporter, with Mr. Lyon's consent, to publish this case, which, he hopes, will at least be found as instructive as the majority of those which have already been submitted to the profession.

III. *On Facial Anæsthesia.* By JOHN B. COWAN, M.D., Glasgow.

FACIAL anæsthesia constitutes one of the most interesting affections of the nervous system, not so much from its comparative rarity, as from the important character of the morbid changes from which it arises, and the varied phenomena resulting from these changes.

It is proposed, in the following paper, to give a brief account of the symptoms and pathology of this disease, derivable from an analysis and comparison of the cases upon record. To make such an account complete, it might be proper to trace the results of recent researches into the minute anatomy of the trifacial nerve, and to discuss the various intricate points connected with it, on which the opinions of physiologists differ. But the relations which subsist between the nerve, and the different organs of the senses, and in fact, its functions in general, will be pretty fully elucidated by the details of cases of facial anæsthesia, which practically confirm to a great extent the results of physiological investigation, and show most forcibly how mutually dependent upon each other are those two great branches of medical science,—physiology and pathology.

---

* British and Foreign Med.-Chir. Review, Jan. 1852, p. 238.

By the term anæsthesia is meant loss of sensibility, or as it is more fully defined in the work of Romberg, it implies "a diminution or loss of the energy of a sensory nerve, from its excitability or condensing power being reduced or destroyed."* The same author points out, "That it must be distinguished, as a disease, from the state in which the sensibility has not been called into play, or is undeveloped, as well as from that in which the activity of the nerve and sensation are temporarily suspended." It must be borne in mind, that sensibility admits of varying degrees, being different in different parts of the cutaneoŭs surface, and even at different periods of life. Anæsthesia most commonly occurs, either as an immediate antecedent of motor palsy, or coincident with it, but has been found to exist in various parts of the body, independent of any paralytic affection. Liston records a case in which no pain was experienced during the operation of removing the metatarsal bone of the little toe. Andral observed anæsthesia of the surface in a number of round spots, the adjacent integument being quite sensitive. Ollivier narrates a case where there was a spot on the hip destitute of sensibility. Pouteau gives two where the left upper extremities were devoid of feeling. Sir Charles Bell attended a lady who had deficient sensibility, first in the hands, and in whom it was latterly completely destroyed over the whole body. Romberg minutely details a case where there was perfect anæsthesia in all the parts supplied by the peroneal and tibial nerves; and others are on record where, without any deficiency of motory power, tactile sensibility was more or less destroyed.

When anæsthesia is an accompaniment of paraplegia, the extent to which it occurs seems to depend upon the producing cause. Thus, when paralysis is the result of spinal concussion, or of severe injury of the cord, along with the loss of motion, there is loss of sensation; while in what may be regarded as chronic cases, those arising from disease or some spontaneous morbid alteration, the sensibility is generally unimpaired. It may happen too, in cases either of complete or partial paralysis, that the sensibility without being destroyed is defective, and that the anæsthesia may confine itself strictly to one seat. When there is both palsy of motion and of sensation, a state which Dr. J. R. Bennett has characterized as constituting *perfect* palsy, the latter is invariably first restored.

Facial anæsthesia, or deficient or entire loss of sensibility in the parts supplied by the fifth pair of nerves, or in some of them, is however the most important form in which insensibility occurs, and derives much additional interest from the obscurity in which the respective functions of the facial and trifacial nerves were long involved.

---

* **Romberg on Diseases of the Nervous System. Syden. ed. vol. i. p. 192.**

It may result from disease, of the cerebrum where the fifth nerve takes its origin, of the nerve within the cranium, or of the nerve after it has emerged from the cranium: and, according to the seat, Dr. Marshall Hall has shown that there is a striking contrast as far as regards one class of symptoms. Thus, where the disease is one of origin, there is insensibility of eye and nostril; when it exists in the nerve exterior to the cranium, the eye is unaffected, while, should there be disorganization or division of the nerve within the cranium, the eye is partially disorganized, owing to the destruction of its ganglionic or nutritive function. Romberg describes a peripheral and a centric anæsthesia of the fifth pair, the first distinguished by the isolated loss of conduction on the side of the lesion, while the physiological characteristic of the second lies in the crucial effect of the lesion, the diagnosis being established by coincident affections of the nerves of the face or trunk. He shows how the precise seat of the disease may be diagnosed in the following propositions:—*(a)* "The more the anæsthesia is confined to single filaments of the trigeminus, the more peripheral the seat of the cause will be found to be. *(b)* If the loss of sensation affects a portion of the facial surface, together with the corresponding facial cavity, the disease may be assumed to involve the sensory fibres of the fifth pair, before they separate to be distributed to their respective destinations; in other words, a main division must be affected before or after its passage through the cranium. *(c)* When the entire sensory tract of the fifth nerve has lost its sensation, and there are at the same time derangements of the nutritive functions in the affected parts, the casserian ganglion, or the nerve in its immediate vicinity, is the seat of the disease. *(d)* If the anæsthesia of the fifth nerve is complicated with disturbed functions of adjoining cerebral nerves, it may be assumed that the cause is seated at the base of the brain." The disease may be a consequence of some injury, may be spontaneous, or attributed to some exciting cause. It may be general or local, or more correctly perhaps, complete or incomplete; the first being when the whole of one side of the face, the second when only a portion, is affected, and this latter is most likely to follow an injury, or to be an accompaniment of palsy of the motor branch of the fifth. Thus, Sir C. Bell details the case of a gentleman who, after getting a tooth extracted from the lower jaw by an inexperienced person, found that he had lost the sensation of one-half of his lower lip, a circumstance which formerly would have been inexplicable, but is now understood to have arisen from injury of the mental nerve, which comes through the jaw to supply the lip. The symptoms of facial anæsthesia may develop themselves gradually, or may come on suddenly, and not unfrequently they are preceded by neuralgia. It will appear obvious from a perusal of the published cases, that what seems to be the most permanent symptom in many of them, is absent altogether or less marked in others, owing to the difference in the seat of the lesion. Further, it is by no means infrequent to find this disease of the fifth nerve complicated with disease of other nerves, more particularly of the portio dura of the seventh.

The symptoms may be generally stated to consist in complete or partial suspension of the functions of the trifacial nerve, loss of tactile sensibility in the parts supplied by it, viz. the integuments of the cheek and side of head, the eyelids, conjunctiva, tongue, schneiderian membrane, &c. accompanied by loss of taste on the side of the tongue which is affected, frequently by loss of smell and hearing, and by inflammation of the eye, terminating in ulceration of the cornea, and by no means uncommonly, in total disorganization of the globe. An interesting addition to these symptoms is paralysis followed by wasting of the muscles of mastication, supplied by the inferior maxillary nerve. Although, however, the parts mentioned may be quite destitute of sensibility strictly speaking, it must be remembered that the feeling of pain may be conveyed from the presence of some inflammatory or other morbid process going on in the nerve, or in other words, the loss of sensibility may be merely superficial. It is by no means uncommon for the real nature of the affection to escape notice for some time, the attention of the practitioner being directed to some one prominent symptom as the ophthalmia. As the disease, whether existing in the brain or in the nerve, advances, there may be many complications.

To trace the connexion existing between the nerve and the parts supplied by it, the individual symptoms will require separate notice, and their comparative frequency and importance will be illustrated by constant reference to the cases which have been recorded. It does not appear that the disease is of more frequent occurrence at any particular period of life, but in young persons it is very uncommon in the permanent form. Partial loss of sensibility, however, may accompany what is called a *blight* or temporary paralysis of the facial muscles, an affection caused by exposure to cold, by enlargement of the parotid gland, by tumours pressing on the facial nerve, by lesions of that nerve, or by abscesses of the internal ear.

Causes and Premonitory Symptoms.—The occurrence of the disease is ascribed by the patients to a variety of causes, many of which are of course unconnected with it altogether, and there is a marked difference in the primary symptoms in different cases. Injuries have in several instances produced facial anæsthesia. Two are recorded, one by Berard,* the other by Von Meyer,† in which it supervened on pistol shots, received respectively through the right ear into the petrous bone, and on the right side of neck; and in the case of Windsor, given by Sir C. Bell, it seems to have followed the receipt of two injuries on the same part of the head. There are two or three more common modes in which it makes its onset. It is often sudden, and sometimes is only preceded by a slight perversion of sensibility, or by a tingling sensation. Frequently there are attacks of headache, or pains in occipital region and in the side of the face, which is afterwards the seat of the anæsthesia. Dimness of vision may be such a prominent symptom that the patient may not be aware of the loss of sensibility, till his attention is directed to it. In three or four cases it has occurred after a simple fit or an epileptic attack. Further, it happens as a consequent of facial paralysis, a fact which does not seem easily explicable in those instances where the motor power had been entirely recovered, before the sensory function had been destroyed.

---

* Gazette Médicale, vol. viii. p. 490.

† See Romberg, p. 256.

(*a*) *The loss of common or tactile sensibility* is the main characteristic of the disease, and it is important to notice the extent over which there may be this loss. In a complete case of facial anæsthesia, the whole of one side of the anterior part of the head, and of the face, with the exception of a small space, (bounded by the zygoma, the course of the facial artery, and the lower margin of the jawbone,) supplied by twigs from the cervical plexus, is destitute of sensation. The ocular and palpebral conjunctivæ, the side of the tongue, and the nostril corresponding with the affected part, as well as the gums, are insensible, but the pinna of the ear is unimplicated, although receiving twigs from the anterior auricular division of the inferior maxillary, and also the back part of the head. As instances of this complete nature, the case given by Mr. H. Mayo,* and one of Mr. Dixon's,† may be cited. In the first of these, there was insensibility of the whole of left side of face and head, except the ear, the skin over the parotid, and a narrow surface extending to the upper lip in the line of the facial artery, being parts supplied by the second cervical nerve. The back and upper parts of the head, too, retained their sensibility. The left eyeball, nostril, and gums were perfectly, the left side of the tongue partially, insensible to external impressions. In the second, the prick of a pin could not be felt on left side of face, except in the parts already indicated as deriving their sensory properties from the cervical nerves; the conjunctiva, left nostril, and left side of tongue were completely deprived of sensibility.

In the majority of cases, however, the anæsthesia is more limited, and in some is confined to a very small spot. Thus, in a case of Sir C. Bell's,‡ the surface of the eye and the lining membrane of the eyelids were the seats of it, but at a later period of the history it extended to the integuments of cheek and forehead for about an inch around the eye. In the cases given by Serres,* the right eye, eyelids, nostril, and half of the tongue, were alone the seats of the anæsthesia. In another case of Bell's,† the right conjunctiva, right side of tongue, and right nostril, were the parts deprived of sensation.

---

* Anat. and Physiolog. Commentaries, part 2, p. 12.

† Med.-Chir. Trans. vol. x. p. 378.

‡ Sir C. Bell on the Nervous System, p. 339.

As previously stated, the want of sensibility may exist along with very severe pain arising from inflammation, and the progress of disease in the nervous substance. The most striking instance of this occurred in Windsor, whose case has already been referred to, and in whom, coexistent with tactile insensibility, there was acute pain of the whole of left side of face and forehead. In Mr. C. W. Bell's case,‡ there was loss of sensibility in left side of face, except in the integuments surrounding the orbit, and in left nostril and left side of tongue. The patient, however, often suffered from pain in left cheek, eyeball, and forehead, but always without tenderness. There is a peculiarity too in the case given by Mr. Stanley § well worthy of notice. The patient was subject to frequent attacks of erysipelas of the head, but a complete line of demarcation was always drawn between the left (the insensible) and the right side, the former never participating in them. Dr. Rigler, in a case under his observation, states that the patient at its outset complained especially of the difference in the complexion of the two sides of the face, the left (the affected one) being remarkably pale and flabby. This then constitutes the principal symptom of the disease, and the one from which its name is derived.

(b) Ageustia.—The next symptom is loss of taste, which is not invariably, though in a very large majority of cases, a concomitant of the loss of tactile sensibility on the side of the tongue, corresponding with the affected side of the face and head. The only modifications of this symptom are that, as in two cases ‖ which have been related, the taste may be perfect at the base of the tongue and lost in its anterior portion, and that, as in one case, the sense may be perverted but not destroyed.¶ Mr. H. Mayo, in the patient under his care, paid particular attention to this point. The result was, that the sense of taste was found to be absent when the surface of the organ alone was irritated, and that sugar was not tasted on either side. Cayenne pepper placed in contact with the tongue caused after a while a feeling of heat, but the patient had no perception of its peculiar savour. A probe applied to either side produced nausea and retching, a circumstance to be anticipated, as the sensations followed by the reflex action invariably occur, on irritation of the parts supplied by the glossopharyngeal nerve. Romberg found the left half of the tongue

---

* Anatomie Comparée du Cerveau, Tome 2, p. 67.

† Op. cit. p. 301.

‡ Sir C. Bell, op. cit. p 348.

§ Lond. Med. Gazette, vol. i. p. 531.

‖ Dixon, Med.-Chirurg. Trans. vol. x. p. 378 and 389.

¶ Mr. C. W. Bell's.

entirely deprived of the power of taste. The patient could not detect the most varied articles of diet on this side, while the sense of taste was normal on the opposite side. The articulating and masticatory movements of the tongue were normal, nor was the nutrition of the left side at all impaired. Dimensions, temperature, and colour, were identical on both sides. The blood exuded as freely and copiously from small punctures on the left as on the right side. The tongue was equally moist and furred on both sides.* There can be no doubt that the presence of this symptom in cases of division or disease of the trifacial nerve has tended to elucidate the functions of that nerve, and has proved satisfactorily that the sense of taste does not reside in one but in two nerves, the lingual branch of the fifth and the glosso-pharyngeal. The surface of the anterior portion of the tongue is supplied by the first of these, while the latter is distributed on the back of the tongue, and passing along its inferior aspect inosculates with the lingual. That the sense of taste in the anterior part is given by the branch of the fifth, is conclusively proved by the researches of Alcock and Reid, and still more so by its loss supervening on disease of that nerve. It has been argued, however, that this was dependent on defective nutrition of the part, a supposition proved to be erroneous, in some cases at least, by the suddenness with which it occurs, and with which it ceases. Where the whole of the tongue is alike destitute of the sensation, which is the case in chronic disease of the fifth nerve, this may afford a plausible explanation. Romberg, while stating that the question is not yet definitely settled, is inclined to favour the assumption, that the glosso-pharyngeal is the only nerve of taste. He explains the phenomena in his recorded case, which has been quoted, on the ground of a sympathetic action between the sensitive and sensual nerves, which sympathy is most vividly exhibited in the sense of taste. He strengthens his position by reference to cases. In that of Stamm, reported in the *Heidelberg Medical Annals*, there being tactile insensibility of the facial integuments, the taste continued, but was much more vivid on the opposite side. The autopsy revealed a tumour situated on the right wing of the sphenoid bone over the foramen rotundum, with which the fifth nerve at the point of its division was so incorporated that it could not be detached. In Bérard's, the taste was unaffected, the fifth nerve being found on dissection softened and congested. In those of Burrows, Noble, Vogt, and one observed by Romberg himself, the taste was perfect although the tongue was destitute of sensibility. Another argument he derives from the absence of imaginary taste in hyperæsthesia of the lingual nerve. To counterbalance these statements it only requires to be mentioned that, in at least thirty of the published cases, the sense of taste in the fore part of the tongue was destroyed. It has been clearly demonstrated on the other hand, that injury or division of the glosso-pharyngeal nerve, impairs the sense of taste on the back of the tongue, and on the mucous membrane of the fauces; and that while the sense is destroyed in the fore part, in consequence of disease of the fifth, it commonly remains perfect in the back part. The experiments of Valentin seem to indicate that the most perfect sensation resides in the glosso-pharyngeal. Still more recent researches go far to show, that the sense of bitter taste is dependent on it, animals being found, after its division, to take food and nauseous substances which they had before refused, and that sweet, sour, and salt tastes, are proper to the lingual branches of the fifth.

---

* Romberg, p. 254.

(c) Masticatory movements.—The portio minor of the fifth pair, or motor division of the inferior maxillary nerve, sends branches to the muscles of mastication, the masseter, temporal, two pterygoid, anterior belly of digastric, and mylo-hyoid, supplying them with motory power, as has been established by irritating or dividing the nerve, by these muscles being unaffected in facial paralysis, and by being paralyzed in facial anæsthesia. The buccinator, however, in the last named disease, does not participate in the paralysis, and hence the branch it receives from the fifth must be a purely sensory one, its motor powers being derived from the facial. Loss of motory power in the above muscles is a frequent accompaniment of facial anæsthesia, and if the disease is of long standing, the muscles, from the state of inactivity into which they have been thrown, become loose and flaccid. In sixteen cases at least, there is reported imperfection of the masticatory process, generally along with distinct flaccidity of the temporal and masseter muscles. That this symptom should not be of uniform occurrence admits of easy explanation. If the pathological condition be one involving all the roots, or if it implicate the inferior maxillary after it joins the *portio minor*, then there will exist paralysis of the muscles of mastication. If it exist in the ganglion, or in some of the other branches, the muscles will not be affected. In Bishop's case* the muscles on the diseased side of the face acted perfectly, and this was explained by the necroscopic appearances, the lesser root not being at all involved in the disease. In a case of Sir C. Bell's† too, where the affection seemed to result from a local injury, the muscles were unimplicated. In Mr. Whiting's,‡ at first the patient could chew with equal facility on either side, but three months before death the masticating muscles of the anæsthetic side became incapable of acting, and the autopsy clearly showed, that the morbid state of the brain producing the symptoms had been gradually extending. In Bellingeri's case,§ where facial anæsthesia ensued on partial facial paralysis, the muscles were not concerned, probably because the disease was local. This case, the ultimate result of which is not recorded, would seem to contradict the

---

* Lond. Med. Gazette, vol. xvi. p. 463.

† Op. cit. p. 339.

‡ Bell, p. 352.

§ Dissertatio Inaugur. 1818, p. 125.

assumption of Romberg, that where the anæsthesia is complicated with disturbed functions of adjoining cerebral nerves, the cause is seated at the base of the brain. In the case of M. Serres, mastication was not impeded, and dissection revealed a lesion of the casserian ganglion.

The centric anæsthesia of the fifth pair is described by Romberg as accompanying recent hæmorrhage in the brain. "It affects," he says, "the third branch of the fifth pair on the side opposite to that on which the lesion is seated." In the cases he had observed, there was always paralysis of the *portio minor* of the fifth, the patient being only able to masticate with the muscles of the opposite side of the face. He seems to be the only author who has met with and detailed cases of this kind.

From these facts it is evident, that paralysis of the masticatory muscles is a valuable symptom, as diagnostic to a certain extent of the nature and seat of the morbid condition on which the anæsthesia depends.

TABLE OF CASES AND RESULTS.

	Authority.	Vision.	Hearing.	Smell.
1.	Bishop.	Unable to distinguish colours. Strabismus and double vision.	Perfect.	Perfect.
2.	Dixon.	Destroyed.	Impaired.	Lost.
3.	...	Do.	...	...
4.	Sir C. Bell.	Do.	...	...
5.	...	Objects distorted and double.	Tingling in ears.	...
6.	...	Dim.	...	Impaired.
7.	...	...	...	...
8.	...	Lost, but restored.	Lost, but regained.	...
9.	...	Lost.	Defective.	...
10.	...	Dim.	Lost.	...
11.	Colles.	...	...	...
12.	C. W. Bell.	Lost.	...	Perverted, latterly destroyed.
13.	Stanley.	Do.	Lost.	...
14.	Mayo.	Impaired.	Do.	Lost.
15	Alison.	Lost.	...	...
16.	...	...	...	...
17.	Serres.	Lost.	Lost.	Lost.
18.	Halford.	...	...	...
19.	Whiting.	...	...	...
20.	Bellingeri.	Perfect.	...	Perfect.
21.	Longet.	Lost.	Lost.	Lost.
22.	Bérard.	Perfect.	Perfect.	Perfect.
23.	Gama.	Lost.	...	Do.
24.	Von Meyer.	...	...	Do.

The blanks indicate no mention of the sense.

(*d*) *Other senses.*—In addition to partial destruction or perversion of the sense of taste, the other senses are frequently either lost or impaired, where there is complete paralysis of the fifth nerve, and the same results have been observed to follow its division in the lower animals, so that it must exercise some influence on the organs of special sense, although the nature of this influence may form a ground of controversy. From the foregoing tabular statement the comparative frequency of these symptoms will be seen.

Out of these twenty-four cases vision was more or less affected in fifteen, hearing in nine, and smell in six.

The organs of the senses, in addition to the nerves of special sense, are supplied with branches of the fifth, so that each organ has two kinds of sensibility, special and general. It is not denied or doubted that the fifth is a medium of perception, as far as regards touch, and it has been shown that it is so also as regards taste. Magendie in addition considered it as the source of smell, sight, and hearing, and by his experiments held that he had established this fully, as far as the first of these is concerned.

Sight.—That the optic nerve is indispensable to vision is clear, while, at the same time, it is obvious that the fifth exercises a very remarkable influence over it, and that in some animals it is its sole source, they being possessed of no optic nerve. The conclusions of Alcock, to whose article on this subject in the *Cyclopædia of Anatomy and Physiology* the reader is referred, are, "that the optic nerve is the proper medium of perception to visual impressions, and that the co-operation of the fifth nerve is not even necessary, to enable the optic nerve to fulfil its function. As the instrument of the general sensibility of the structures of the eye, however, the fifth nerve may be the channel, through which impressions not visual though perhaps excited by an agent of vision, viz. light, may be conveyed." Dr. Mackenzie, it may be stated, considers irritation of the fifth by no means an uncommon cause of *sympathetic* amaurosis.

Hearing.—The power which the fifth nerve exercises over this sense is probably dependent on defective nutrition.

Smell.—The loss or impairment of the sense of smell might naturally be looked for, in those cases of facial anæsthesia, where taste is destroyed, as there is an evident connexion between the two; although its precise nature may not be easily explained. Magendie maintained that the fifth nerve was its only source. That his views were erroneous, however, has been fully proved by the researches and observations of Bell and others. In fact, he mistook the common sensibility of the schneiderian membrane for the sensation. Nevertheless, anæsthesia of that membrane diminishes the acuteness of the perception so materially, as to have led observers to consider the sense destroyed. The case of Mr. Bishop, the first in the table, in which smell remained perfect, although the fifth nerve was destroyed, establishes its dependence on the olfactory alone. The absence of an olfactory nerve in cetaceous animals, has been cited to show that the fifth is capable of conveying the sensation; but it remains to be proved that the sense exists at all or is exercised in these animals. "It appears that there is a distinct perceptive faculty enjoyed by the nostrils, independent of the fifth, and dependent on the olfactory nerve; that we possess no positive evidence of the latter nerves being in any case the media by which this peculiar perception is recognized, but that they serve for the recognition only of impressions of contact, frequency, or irritation.*

(e) Nutritive function of eyeball.—The next symptom of facial anæsthesia requiring notice is defective nutrition of the eye, leading to inflammation, ulceration, and ultimately disorganization of the eyeball; and this has been shown by Dr. Marshall Hall to occur chiefly when the disease attacks the nerve, before it has made its exit from the cranium, proving that it is dependent on destruction of its ganglionic function. In a case of complete *paralysis* of the fifth, the conjunctiva is deprived of sensibility and is unaffected by chemical irritants. The cornea becomes opaque, inflammation of all the tunics of the eye follows, and very rapidly ulceration of the cornea and destruction of the globe ensue. Writers differ in opinion as to whether these results are distinctly traceable to lesion of the fifth nerve as a primary cause, or to a combination of secondary causes; and it has been argued by Alcock and others, that the violence inflicted in the vicinity of the organ, its exposure through the deprivation of sensibility to the action of irritating matters, and the absence of the lachrymal secretion, are the conditions which tend to its inflammation and ultimate destruction. The balance of evidence appears to incline in favour of admitting the effects to ensue directly from a lesion of the nutritive filaments. Be this as it may, the fact to be stated here is, that all the appearances mentioned above are found in cases of facial anæsthesia, and form one of its most prominent symptoms. Good examples are furnished by the cases of Dixon, Stanley, and Alison. In the first of these there was ulceration at inner canthus of left eye, and left *ala nasi.* The cornea was devoid of epithelium, dry and dull. The iris motionless and of a green tint. In the second there was inflammation of conjunctiva, opacity and ulceration of cornea, escape of the aqueous humour and disorganization of the globe; and the third likewise resulted in destruction of the ocular apparatus.

(f) General motory power of face.—This is sometimes affected in paralysis of the fifth. Reference has already been made to the destruction of motory power in the masticatory muscles, and it is unnecessary to allude to those cases in which, from conjunct disease of the facial nerve, there is complete paralysis of all the facial muscles. Occasionally, however, more limited destruction or impairment of *mobility* occurs. In one of Mr. Dixon's cases, in addition to the left temporal and masseter muscles, the levator palpebræ and superior rectus were paralyzed, although ultimately

---

* Cyclop. Anat. and Physiol. p. 307.

their action was restored. In one of Sir C. Bell's cases, supervening on a fit, the affected side of face was for a time distorted. In another the power of shutting or elevating the eyelid was lost. In Mr. Whiting's case the patient could raise the upper eyelid by voluntary power, but could not keep it elevated. In Gama's the mouth was drawn to left side, the right being the affected one, and on post mortem examination the seventh nerve was not implicated in the lesion found to exist.

The treatment of facial anæsthesia can of course only be palliative, and directed with a view to mitigate the severity of the symptoms. In some cases, decided benefit has been observed to follow the employment of local applications, such as blisters and leeches; and these, combined with cupping and the administration of purgatives, are the measures which may generally be had recourse to. Spontaneous cures are fortunately not unfrequent.

Morbid appearances.—The morbid conditions out of which facial anæsthesia springs have already been indicated. They differ from one another as to their precise nature and seat, but are rarely or never obscure. In some instances the nervous cords are the seats of lesion, and they may be found in three states, either hardened, softened, or atrophied. In Dr. Alison's case the nerve of the left side close to the ganglion was found very dense, but beyond this it was much wasted, and at its junction with the tuber annulare nothing but the membrane seemed to remain. In the case quoted by Sir C. Bell, at page 341 of his work, the fifth nerve on affected side was soft, yellowish, and reduced almost to a jelly, and a line and a half less in diameter than its fellow. The casserian ganglion may be the seat of the pathological condition. In Serres' case it was found to be swollen, of a yellow colour, and less vascular than usual, and the nerve was changed into a gelatinous substance like the ganglion. In Gama's case the casserian ganglion was enlarged, had the appearance and consistence of bacon, and had nerve-fibres fused with it. The origin of the trifacial was softened, atrophic, and deprived of its white matter.

Tumours pressing on the nerve may disturb or destroy its functions. Dissection in Bishop's case exposed a scirrhous tumour, lying on inner surface of sphenoid bone, extending laterally to the internal auditory foramen, and resting posteriorly on the pons varolii, which was slightly ulcerated. The tumour had completely obliterated the foramina for the exit of the three branches of the fifth nerve. In the frequently quoted case of Windsor, a tumour was found on side of *sella turcica* reaching forward to, and closing the foramen lacerum, and occupying the whole of cavernous sinus. It was of a cheesy texture, mixed with fibres. The third, fourth, fifth, and sixth nerves were imbedded in the tumour. In Mr. Stanley's case dissection showed enlargement of the tuber annulare on its left side, in a direction to compress the fifth and seventh nerves against the base of the skull. On making a section of the tuber annulare, a tumour was discovered extending into left crus cerebelli.

Finally, the disease may be of a more extensive character, situated in and involving a large portion of the cerebral mass. Bérard's case, in which a pistol shot had been received into the right ear, may be cited. There was loss of substance in lower portion of middle lobe of right hemisphere, leading to a cavity containing pus and the bullet. There are many other varieties in the nature and extent of the lesions, on which it is unnecessary to dwell.

Such are the characteristics and causes of a disease which, whether viewed in relation to the phenomena existing during life, or the appearances noticed after death, must be peculiarly interesting to the medical observer. The recorded facts on which this paper is based have already done much to elucidate the functions of the cerebral nerves, and there is good ground for hope, that the advance of physiological science may soon entirely dispel any difficulties and doubts which still remain.

IV. *Remarks on the Propriety and Advantages of Hospitals for the cure of Syphilitic Diseases.* By R. D. TANNAHILL, Esq., Surgeon to the Glasgow Lock Hospital, &c.

THOUGH medical science, even in its present enlightened state, cannot account for many of the causes of disease, nor in every case point out a remedy, yet it is sufficiently advanced to teach us that many of the maladies which afflict mankind have their origin in ignorance and crime, and may therefore be correctly denominated removable diseases. If human life was regulated by that degree of knowledge we already possess, the number of diseases would be considerably lessened, and the range of medical study and medical practice vastly circumscribed. But neither in this, nor in any other age of the world, have the habits and customs of mankind been strictly governed by the rules of morality, or the dictates of existing philosophy. Man's impulses and appetites have all along been more potent than his moral faculties, and a fearful amount of physical suffering has been the natural and inevitable consequence. The inferior animals are comparatively exempt from disease, and when left to pursue a course of life in harmony with their natural instincts, they generally reach the extreme limits nature has prescribed for their peculiar species. On the contrary the higher faculties of man have not always been turned to good account, and instead of being made to subserve his best interest, they rather seek out artificial gratifications, which in their turn create morbid or artificial appetites. These again produce a complication of misery and disease, which baffles the most enlightened efforts of the physician, and greatly limits the average duration of human life. Man has thus suffered from the beginning of time, and it is neither uncharitable nor unphilosophical to say that, constituted as he is, he will continue so to suffer till the end.

Among the diseases which spring from a violation of the moral and physical laws, those of a venereal character occupy a conspicuous place. The disease termed syphilis no doubt existed from the earliest ages, though under various names and degrees of aggravation. It is supposed by some to be that referred to in certain passages of Scripture, under the term leprosy. The early Grecian authors allude to this disease, and we are told by those conversant with Chinese history, that as far back as their records extend, no mention is made of a period when it did not exist. Though it must have been known in Europe at a very early time, we have no accurate account of it, of which I am aware, till about the year 1494, when it assumed a degree of virulence that caused medical men to regard it as a new disease. It originated or appeared in this aggravated form first at Naples, when there was a promiscuous assemblage of soldiers from various parts of the world. From Naples it rapidly spread to other countries, and from that period till the present, it has had a "local habitation" in every town and village throughout Europe, disseminating its baneful effects everywhere, so that not only are the guilty parties subject to primary disease, but in many instances the innocent also suffer from secondary symptoms of the most distressing character. Under these circumstances are the wretched sufferers to be left to their miseries, because they may have been occasioned by a loose morality? Assuredly not. The natural ties that bind man to man, the universal liability to err, as well as the great principles of Christianity, all show it to be a duty, to use the best endeavours to prevent what is evil, and also to alleviate as far as possible what cannot be prevented. It is for others to urge the virtues of restraint upon their fellow creatures, while the duties of the physician are strictly practical. It is not within the province of his profession to pry into the immorality of the producing cause of disease, and then determine whether or not he will apply the remedies at his command for the cure or alleviation of the sufferer. It is enough for him that there is suffering, and under whatever circumstances it may have been produced, whether from uncontrollable natural causes, or recklessness or immoral indulgences, his duty plainly is to seek out and apply the best means of relief.

Of all forms of disease, there is perhaps none under which the patient meets with less sympathy than that of a venereal character. This is easily accounted for, and it argues well for the moral feeling of the community, that there should be a stigma popularly attached to those who suffer under this species of malady, when it is directly the result of moral laxity. But there is on the other hand, a danger of falling into the error, that because the individual suffers from the effects of his or her own folly, such have no claims on the compassion of others. The glutton, the drunkard, and the wine bibber, equally bring disease upon themselves, but who would urge this as a reason for closing our hospitals and dispensaries against its victims, without an attempt to relieve or alleviate? The laws of our country, in regard to the poor, do not recognize any distinction between the individual, who is disabled through his own indiscretion, and him who suffers from causes over which he has no control. Yet no one dares to dispute the wisdom of this arrangement. If the question then be duly considered, it will be apparent that to deny our sympathies to the syphilitic patient is to act partially, and certainly that is no feature of Christian benevolence.

In regard to our city, it is not affirming too much to say that a great many of the male sex contract syphilis, particularly in the earlier periods of life, and their anxiety for a speedy cure causes too many of them to repair to one or other of those empirics, whose filthy placards are seen on every available wall and corner. Putting faith in these shameful pretenders, the dupe pays liberally, receives certain nostrums, and if acute symptoms gradually abate, he considers himself cured, when in reality he is often in a more dangerous state than that in which he was, before the prescriptions were taken. The virus, during the course of this mal-treatment, is absorbed into the system, and will inevitably develop itself, though it may be years hence, in some of those secondary and constitutional symptoms to which we have already referred. Thus the health of our youth becomes so seriously undermined, as to occasion much unhappiness to themselves, and frequently to entail disease and misery on future generations. Every one on the slightest reflection will readily perceive the disastrous consequences which must follow such a system. They have only to imagine these individuals becoming husbands and fathers, and they will then understand the evils which spring from this course of quackery. It is with no small degree of satisfaction we observe that this subject is now being ably discussed, and the necessity for hospitals for the special and exclusive treatment of venereal diseases, conclusively demonstrated in the pages of some of our most influential medical periodicals. Dr. Rose says, in his letter in the *Lancet* of January last,—"It is absolutely necessary for the sake of having always a proper supply of sound and efficient sailors, that Lock Hospitals be instituted by government in all seaport towns and cities;" and a great majority of the profession agree with him.

There is in Glasgow an institution called the Lock Hospital, for the reception and treatment of females labouring under venereal diseases, and though it has been very inadequately supported, and has had much to contend with in the way of prejudice, it has still been the means of effecting not a little good. Since its establishment in the year 1805, there have been admitted into this institution 12,778 unfortunate females, of whom 12,430 have been cured, 93 have died, and the remainder have been discharged relieved, or for some good and valid reason. This amount of benefit has been effected at a very moderate expense, and the good thereby done indirectly to the community is beyond calculation. If these patients had not been received into this or some similar institution, their diseases would have fearfully increased in their own persons, and have been communicated to others to an extent that is painful to contemplate. It is to be regretted, that there is still in the minds of many well-intentioned individuals the idea, that this institution only encourages what it is meant to alleviate, and the reason they urge is that the patients, as soon as set at liberty, return to their former immoral pursuits. There is no doubt that many of them do so, but this by no means relieves the benevolent of their duty towards them and the community. If the histories of these unfortunate creatures were properly investigated, it would be found that many of them have been driven to their vicious career through want or neglect. Helpless orphans there are amongst them, who have been cast on the sea of life without one friendly hand to direct their course, without experience or education to warn them of the shoals and quicksands which on every side so treacherously beset them, with no polar star in the dim distance to impart one solitary ray of hope or encouragement, that there is still within their reach a quiet and peaceful haven. If such, through the allurements of unprincipled libertines, should make shipwreck, shall no friendly hand be stretched out to their rescue; shall the streams of compassion, which flow so freely to all other classes of unfortunates, be closed against them for ever—shall they be first left unheeded in their career, without any effort being made to restore them to the paths of rectitude,—left till disease overtake them, and then allowed to spread their disease or sink under it, without opening to them any asylum? Admitting even that their unfortunate career is the result of their own folly, I ask again, has the community no duty to perform towards them? If a son or a daughter stray from the paths of rectitude, the common impulses of nature prompt the parent to use all endeavours to reclaim that erring member of his family, and if all efforts fail to bring about the desired result, does not the parent still feel himself bound to mitigate as far as he can the evils which have taken place? What the duty of a parent is towards an unfortunate and guilty child, in like circumstances becomes the duty of the community, or at least that portion of it which desires to be guided by the dictates of Christianity, towards their erring and unfortunate fellow-creatures.

It may be considered that to refer to Scripture on a subject of this nature, is overstepping the province of the physician, but this is absolutely necessary, because those who object to such hospitals, generally do so or profess to do so from religious motives, and because I conceive any one who advocates the claims of the Lock Hospital, and other similar institutions, is undoubtedly acting strictly in accordance with sound philosophy and sound Christianity.

A question of some moment then arises. Could the constitution of the Lock Hospital in this city be so improved as to make it effect a greater amount of good? At present its benefits are confined solely to female patients, and consequently its usefulness is comparatively limited. There can be no doubt that if preference were desirable, this class ought to have it, not only from their being the more direct agents of contamination, but because many of them resume their former practices, from the fact of being shut out from all other means of securing a livelihood. Charity would at once point to the superior claims of the female sex, but reason, less partial, urges the necessity of the most unlimited efforts to subdue the evils of this most loathsome distemper. Ample provision therefore ought at once to be made, by increased accommodation, for the admission of the male sex also; of course under such arrangements as would secure that isolation and privacy, which morality and propriety alike demand. It is not maintained that all who make application ought to be accommodated with bed and board at the institution, but that all who wish, should receive advice and treatment, those only being retained as house patients whose cases are peculiar and precarious.

Opinion differs in regard to gratis treatment, but it is not easy to perceive any reason why such an hospital should not be organized on as liberal principles as the Glasgow Royal Infirmary. To require a fee would do away at once with its efficiency as a philanthropic institution, and place insuperable barriers in the way of its success. Again, however small, it would cause delay in making application, to a far greater extent than could be generally supposed, and therefore, on sanatory grounds, the benefits should be extended to all without charge.

The Lock Hospital might also be made to subserve another very important end, viz. by making it available for the instruction of advanced medical students. At present the facilities in this city, for acquiring a proper knowledge of the pathology and treatment of syphilitic diseases, are by no means equal to those of other countries, or even of other diseases among ourselves, and the consequence is, that very many of our licentiates find themselves deficient in this department of their profession. As a medical and surgical school, we may affirm with perfect safety, and without fear of contradiction, that our Royal Infirmary is unsurpassed in Britain, or even in any other country. Its wards are constantly filled with numerous accidents, and many cases of disease, of the greatest interest to the clinical professor and the student, while the cases of syphilitic complaints are comparatively few. In order then to make the Lock Hospital a valuable adjunct to our Infirmary and Medical Schools, it is necessary that advanced students be admitted on suitable terms to visit the hospital, and see the practice, in company with the medical officer. Some may suppose, that the admission of students would prevent patients from taking advantage of the privileges held out to them, but a pretty extensive observation proves that this would not be the case. It has always been observed, that when patients were satisfied that spectators visit the wards of an hospital, not from a prurient and vulgar curiosity, but from a desire of scientific investigation, they have no hesitation whatever in submitting to prudent examinations. Seeing then that a select number of students could not militate against the curative working of the institution, and would be advantageous in a pecuniary point of view, no valid objections can be urged against it as a theatre for the clinical lecturer, while there are the strongest reasons on the opposite side. Medical students daily complain of this hurtful exclusiveness, while the charlatan rejoices in it, as it secures for him a golden harvest, much more abundant than falls to many of the most skilful and accomplished physicians.

I have thus endeavoured to clear away some of those barriers, which have so materially prevented the employment of efficient means to subdue a malady, which is a most prolific source of physical deterioration; a disease which affects not only individuals, but communities, not only the guilty themselves, but generations yet unborn. I shall possibly on a future occasion make some remarks on the pathology of syphilitic diseases, and the methods of cure which have from time to time been adopted, and endeavour to point out what appears to me the safest and best; but the above remarks may be sufficient in the meantime.

V. *Reminiscences of Hernia.* By William Lyon, Esq., recently one of the Surgeons of Glasgow Royal Infirmary.

I have frequently thought a detail of the cases of hernia I have met with, might prove in some slight degree instructive to my junior brethren, and possibly, interesting to my compeers and seniors, by recalling analogous or similar observations.

Though the subject of hernia has engaged the ablest men, and their descriptions and observations are brought prominently before the student and practitioner, it is nevertheless only by actual experience that the knowledge available in practice can be obtained. We all know how much the anatomy of hernia has been refined on; how minute the descriptions of the operative procedure: but, while not undervaluing possession of the fullest knowledge of these, the practitioner who has them alone to rely on, when necessity for the knife in this disease arises, will, we fear, often feel seriously at fault, to his own regret, and, worse than that, the injury of his patient.

So generally is the correctness of these remarks felt, that it is difficult to name any kind of case, which the general practitioner, especially if a young or unexperienced one, has such a dread of, as strangulated hernia requiring operation. So far is this feeling carried, that I have, oftener than once, known surgeons to run away from such cases; most culpably to absent themselves, leaving the patient to his fate, or to fall into the management of a neighbour, bolder, or better informed: while most practitioners prefer the assistance of some one who has had opportunities of gaining practical knowledge of such cases, rather than operate themselves.

But in reality hernia cases are peculiarly difficult of management. It must be a very extended experience which gives many cases alike. Scarcely any two are identical—differences and difficulties are often occurring, puzzling the inexperienced, and requiring all the tact which extended observation can give.

Whilst writing this paper, viz. Feb. 26, I operated in a case of a kind quite new to me, and which furnished a proof of the frequently-varying conditions presenting in the operation for hernia.

It was that of the internal or direct species of inguinal hernia; differing in shape, position, and coverings, from the common form, not often met with. It was of nearly cylindrical in place of pyriform shape—was directed straight downwards, in place of taking the direction of the inguinal canal—was much nearer Poupart's ligament than the common form; and the skin, cellular substance, and a single thin fascia, were alone divided, when the sac unexpectedly came into view. A rash operator might have been in the intestine ere he thought he had well begun, or a timid or inexperienced one, frightened and confused at the unlooked-for condition. To prove these assertions I will detail reminiscences of some of my hernia cases.

1st. *Of Simulated Cases.*—I recollect a woman admitted to the Infirmary with all the symptoms and appearances of strangulated femoral hernia. So unequivocal were the conditions, that several of the consultants were in favour of immediate operation, and only consented to delay, that the slight doubts of others might be tested by an attempt to move bowels by a purgative and enema. The attempt succeeded, and in a few days the inflamed gland, which, accidentally associated with colic, had occasioned the error in diagnosis, was entirely dissipated.

I have seen several similar instances, in which neither history, situation, form, consistence, size, presence or absence of pain in tumour, or other particular, afforded sufficient means of diagnosis, and where laxatives and enemas alone resolved the doubts, and are the only means of diagnosis in such circumstances.

I have not met with an instance where an operation for hernia was performed, an enlarged or inflamed gland occasioning the error. But should such a case happen to be the maiden operation of a young practitioner, who possibly never witnessed procedure with the knife in hernia, I can readily conceive and allow for his perplexity in trying to determine what he had arrived at, when he had exposed the inflamed or enlarged gland, whether it was the sac, the intestine, or either—points, I will by and bye attempt to show, not easily decided by the experienced, even in ordinary circumstances. The colour, the consistence, the connexions, would all assist, but still the embarrassment and difficulty to the inexperienced would not be slight.

Case 2.—A professional friend requested my attendance in a case of his, where an elderly female had been for a day or two suffering from the usual symptoms of a strangulated hernia, and in whom a tumour about the size of a filbert existed in site of femoral canal, which repeated trial of the taxis failed to remove. By the most careful examination of situation, form, and consistence of the tumour, we were unable to determine whether or not it was a hernia. As the symptoms were not pressing, it was agreed to repeat means for acting on the bowels, and if relief were not obtained by the following day, to have recourse to operation. The means were successful, and the tumour disappeared in a few days.

Dr. Corbet has kindly informed me that this patient died of injured hip joint, when he examined the site of the tumour above described, and found a hernial pouch, 1½ or 2 inches in depth, empty, and easily drawn into abdomen. No doubt a portion of abdominal contents was strangulated in this at the time Dr. Corbet employed the taxis. This he reduced, but the sac inflaming, and becoming thickened by effusion of lymph, produced the tumour, respecting which we consulted, as will be shown in other instances.

Case 3.—A female long subject to femoral hernia had symptoms of strangulation with presence of tumour. Her medical attendant employed the taxis, and, as he supposed, effected reduction. The general symptoms abated, but were not removed, while the tumour re-appeared, was very painful, and tormina and vomiting were present, and bowels had not yielded to the medicines given. The size of the tumour having slightly diminished, not having the tension and firmness of a strangulated hernia, and the urgency of symptoms having diminished, it was supposed the conditions might arise from the recent incarceration, and consequent inflammation of the sac from the taxis, so that delay and means to act on bowels were the most prudent resolutions. By next day the prudence of the opinion was manifested, and the pain and swelling at the femoral opening soon subsided under slight measures.

Case 4.—While acting as attendant in the Infirmary Dispensary, I sent up stairs to my friend Dr. Fleming, a boy of three or four years old, with a strangulated congenital inguinal hernia, which had resisted the taxis before and after his presentation to me. All measures having failed in the ward too, Dr. F. operated, and reduced a large piece of intestine. Next day a tumour was present in the situation of the recent hernia, tense, painful, and voluminous as the former, while abdomen was painful, pulse quick, vomiting frequent, and bowels unmoved. In this dilemma, Dr. F. and I thought it the safest side to err on, to re-open the incision, and replace the supposed re-protrusion. A state of parts was met with somewhat puzzling at first sight. A large, smooth, pale-red tumour was exposed, a good deal like prolapsed intestine, but which on handling, and careful examination, turned out to be the thickened hernial sac, filled with firm semi-transparent jelly like lymph. This was scooped out by the fingers, the wound closed, and the boy did well.

Those three cases were somewhat analogous in respect to a return of the tumour, after the taxis in the two first, and the operation in the last one, and were difficult to decide upon from the symptoms of strangulation partially continuing. I see no practical inference deducible from them, unless that in like circumstances moderate delay may be permitted until means to move bowels have been prudently employed.

There are many sources of mistakes in diagnosis in relation to hernia; I only detail the more important and conspicuous of those I remember having met with. I have seen many instances of dangerous herniæ overlooked, to the great disgrace of the practitioner, and the injury of the patient,—many cases taken for herniæ which were not; and many for hydrocele, &c. &c. which were herniæ: all practitioners of experience must have met with such like.

Case 5.—I was sent for late at night by a surgeon to see a young man who had been treated by him, I think five or six days, for inflamed testis by antimonials, leeching, and fomentation. I found the patient with a large, very painful, livid tumour, occupying left side of scrotum, and extending along inguinal canal, while all the general conditions of strangulated hernia were prominently present; and the nature of the case was made still more evident by its history, a reducible congenital hernia having until recently existed. I sent for instruments and further assistance, opened the sac, and exposed six inches of black, putrid, and of course dead intestine. This was cut off, allowing exit, with much relief, to copious fœcal matter. Improvement rapidly proceeded, and the patient was soon able to walk about, a sad spectacle of bad surgery, unfit by any contrivance to prevent constant discharge of fœces, disgusting to himself and all near him; feeble from insufficient nutrition, and beggared by inability to work. He continued in this state for a few months, when, though opposed as far as possible, contraction of the artificial anus took place: this was a few times relieved by incisions, &c.; a trial was given to Dupuytren's instrument, but it could not be borne, and the miserable patient, at last worn out by colic and peritonitis, the effects of frequent retention, at last died.

It is difficult to conceive how even the most ignorant and inattentive man could have erred so grossly as the surgeon did in this case. That it occurred as stated, I refer for corroboration to Dr. Lawrie, who was the assistant I sent for. If I had abidden by the adage, "*de mortuis, nil, nisi bonum,*" I would not have detailed this case. But I think it an instructive one, urging the student to obtain a knowledge of hernia, and the practitioner to the observance of the oft-inculcated, though frequently-neglected, surgical axiom, always to institute careful examination for hernia where the general symptoms, as they were here, are present.

Throwing aside, as punishment to the surgeon, all conscientious considerations, there cannot be a doubt but that the law would have allowed large—though however large, inadequate—damages to this patient or his heirs; and had he survived, the law would have been appealed to, and the ruin of the surgeon assuredly effected.

Seeing how frequently, in artificial anus, the patient is annoyed and endangered by contraction of the orifice of intestine, or an opposite condition,—relaxation, dilatation, and prolapsus,—and how seldom palliation, far less a cure, is obtainable; would it not be better, even while increasing the primary risks, to draw down both extremities of the divided intestine, in such an instance as I have described; attach them closely by the interrupted suture, return them into abdomen, trust to paralyzation of peristaltic motion by opium, the surrounding pressure and agglutination by lymph, to prevent escape of fœces into peritoneal cavity, while the sutures when loosened would drop into intestine canal; than to incur all the dangers and disagreeablenesses, greater than the forfeiture of life, which follow formation of artificial anus, where the entire calibre of the canal has suffered? I know this is opposed to general opinion, and only ask, balancing the dangers of the practice suggested to those of the other; whether it would not be preferable to run the primary hazards of the one, to the secondary hazards and almost unbearable probable consequences of the other.

I have also seen hydrocele, in children and adults, mistaken for hernia by young and careless practitioners. I have also seen the operation for strangulated hernia performed, no hernia existing.

Case 6.—An elderly man suffered under evident peritonitis, enteritis, or both, and had at same time a large, tense, *opaque* unfluctuating scrotal tumour. The consultants differed in opinion as to the cause of symptoms and proper procedure, but a majority carried for operation. The incision was warily proceeded with, until a deluge of serum betrayed the nature of the case. The incision was enlarged in the direction of the canal and internal ring in search of a hernia; none was found, and the patient died.

The mistake here occurred from a large collection of fluid, causing extension of the tunica vaginalis upwards along the inguinal canal and to the internal ring, thus simulating hernia; and coexisting with that, much thickening of the sac, preventing the feeling of fluctuation, occasioning' opacity; and associated with those conditions, a severe attack of peritonitis. The error may appear an absurd one, and a good theme for the censorious; but the doubts as to the diagnosis, and the dangerous condition of the patient, probably justified the procedure, while it scarcely added to the risks.

Case 7.—I have detailed a melancholy instance of hernia mistaken for orchitis. I will now relate a counterpart, where orchitis was nearly being confounded with hernia, but where the termination was less tragical. I was asked to see in consultation, a young man who was suddenly seized with violent pain and enlargement of a scrotal tumour, which had existed for several years. He had also vomiting, constipation, and abdominal pains, extending from the scrotal enlargement. The history and present symptoms led the attendants to suspect hernial strangulation, and it was to assist at the operation that my attendance was requested. There was a feeling of fluctuation at anterior part of swelling, and hardness and greater pain posteriorly. It was likewise imperfectly translucent, and it came out that the patient had had very recently, gonorrhœa, that an old hydrocele existed, and that the sudden pain and illness arose from an attack of gonorrhæal orchitis could scarcely be doubted, and was made manifest when, on incision to relieve the tension and cure the hydrocele, a copious flow of serum escaped, and much relief followed. Calomel, antimony, and opium were freely given, and the patient soon recovered, but in expectation of a radical cure of the hydrocele by the incision, we were disappointed.

It was the sudden violent pain supervening on an ancient hydrocele, hastily inferred to have been a hernia, and the pain extending into abdomen, in the direction of the cord, as it almost always does in orchitis, that raised any doubts here, which, however, were speedily resolved by the history and local conditions.

Cases of Reduction by Taxis, and Death.

Case 8.—Many years ago I was called to a middle-aged female, who, having had symptoms of strangulated hernia for several days, I was led to careful examination, and found a very small tumour in the femoral opening. This suddenly disappeared while I was gently examining, not employing the taxis, and I congratulated myself on having averted the great danger which threatened. My agreeable feelings were of short duration, for sinking rapidly came on, and the patient died next day. The result was very unexpected, and, on inspection, I found a portion of intestine, on which there was a dark soft puckered spot about the size of a shilling. The part had evidently been strangulated, and being so very small, not occupying more than a fourth of the calibre of the intestine, not bulging external to the stricturing part, as when a knuckle of intestine protrudes, and having shrunk from loss of vitality, had returned under the slight pressure employed.

It is a long time since the case occurred, and I forget whether signs of peritonitis were found. The fatal issue was attributable either to collapse, produced in a weakly subject by the dead portion of bowel, though so very limited, or by peritonitis having been induced and persisted in after the reduction. It shows the danger of delay in hernia, not, however, as too often happens, arising from the neglect or ignorance of the surgeon, but from the supineness of the relations or patient. The reduction was neither to have been anticipated, nor, in the circumstances, prevented, for it occurred while quietly examining, not employing the taxis, and it had no effect in occasioning the fatal result.

Case 9.—I was requested to see, with a medical friend, a patient of his, a middle-aged gentleman, whose usually reducible scrotal hernia having become strangulated, was returned by my friend by the taxis. The symptoms did not abate, however, but increased, and it was at this time I first saw the patient. There was great diffused tenderness of abdomen, constant vomiting, confinement of bowels, and small wiry rapid pulse. At least two suppositions were admissible; one that the induced peritonitis continued, the other, that the sac had been returned along with its contents, and kept up the strangulation. Against the latter no circumscribed hardness could be felt, and before determining on any operative measure, it was agreed to take an additional opinion. This was in the forenoon, and by the time of consultation in the evening, all hope from any interference had fled.

On inspection, a portion, five or six inches in extent, of small intestine, if I rightly recollect, was found lying considerably above the inguinal opening of the left side. It was red at some places, and at others livid black, from diffused and circumscribed extravated blood, and its peritoneal covering was torn for several inches, the torn edges, at some parts, being widely separated.

I attach no blame to my friend, for I have no means of determining whether or not the stricture grasped the protruding part tightly or otherwise; nor do I recollect how long the strangulation had existed, on which two points mainly depend, the rapid or slow softening of the strangulated tissues. Nor do I know the time for, nor the force with which, the taxis had been employed. But the case shows how cautious we should be with the taxis, reminds us of the danger from violent pressure under any circumstances, and enforces its entire exclusion, where strangulation has been long present or severe. It likewise shows that in like cases, unless an evident tumour can be felt, the operation of opening the abdomen, in search of the supposed still strangulated intestine, would be fruitless, while adding greatly to the danger; and that if the abdomen were opened, the searched-for hernia might be far from the point of protrusion.

Case 10.—I was present at the operation for strangulated inguinal hernia in the male. The operator brought into view a smooth glistening tumour, about the size of a small hen's egg, unattached laterally to adjoining tissues. A difficulty now arose, one, as I shall afterwards show, often arising in the operation for hernia, constituting a principal embarrassment, causing much danger, not easily decided by any one, and only, in my opinion, to be avoided by the observation which frequency in operating in this disease confers. The operator carefully examined the tumour, then a first, second, and third consultant; and while a fourth was manipulating, away slipped the tumour into abdomen. One consultant blamed another for using too much force. It was concluded, I fancy, that the hernia was safely returned; at all events, no further procedure was followed, the patient being carried to bed, where he gradually became worse, and died, I think, next day.

On inspection, the tumour was found lying in abdomen, whether near internal ring or not I cannot say. It was found to contain a portion of intestine; the sac had been returned enclosing the protruded intestine, and strangulation being kept up by the sac, in the neck of which the stricture so often exists, the fatal result necessarily followed.

Had this condition been known at the time the tumour slipped into abdomen, it would undoubtedly have been the proper practice to have searched for the tumour with the finger passed through the internal ring, when, if found, it might possibly have been withdrawn by the aid of forceps or otherwise, the sac opened, and the strangulation relieved. The attempt to withdraw having failed, the hazardous but sole chance of averting the otherwise certain fatal issue, would have been to incise the abdominal parietes sufficiently to admit the hand, and thereby have obtained command of the tumour. As other cases to be related will show, the above is not the only danger arising from the difficulty of determining between the coverings of the sac, the sac itself, and its contents. I cannot hope any advice of mine will ensure the difficulty being safely overcome; but the mistakes by omission and commission, which I describe, may, by directing attention to their sources, enable others to avoid them.

Case 11.—A man, an inmate of Barony Poor-house, had a scrotal hernia nearly as large as his head, which by long-continued recumbency, and the taxis, could be reduced. But it soon returned, and, by its weight and dragging, he was rendered very uncomfortable, and from the size of the abdominal opening, and the great weight of the prolapsing mass, all attempts to secure its retention by ordinary trusses were futile.

A strong well-fitting truss, specially made for him, was obtained, the hernia reduced, and kept so, the patient being confined to bed. Symptoms of peritonitis soon after appeared, which, though opposed by all usual treatment, quickly terminated fatally.

I suspect the manipulation in replacing the hernia, the unaccustomed presence in the abdomen of the large mass, and the altered relation of viscera, the impeded circulation, &c. which it occasioned, each played a part in producing the unfortunate termination, and will prevent me repeating the practice followed.

Cases of Hernia Strangulated, and Operated on.

Case 12.—I was requested by the late Mr. Gray, to see with him an old man, whose scrotal hernia had been strangulated for several days, unobserved by the practitioner who had preceded Mr. Gray. As reduction had not been attempted, it was agreed to administer the tobacco clyster before practising the taxis, and if unsuccessful, to operate immediately. It failed, and such debility followed as obliged us to delay for several hours.

I operated, and had no difficulty until I arrived at a small pale, red tumour, which evidently contained a fluid. Whether the tumour was the hernial sac, or a portion of intestine, no one could determine. It was at last agreed, however, to make a small opening, when a very dark fetid fluid freely escaped, and all thought the intestine was opened.

A little examination showed our fears were groundless, the portion of intestine, *much darker* than the sac, coming into view. The stricture was slightly divided, the intestine returned, and, to remove the weak state of patient, the consequence of using the tobacco, some stimulus was given. He only lived a day or two, never having fully rallied. This was my first operation for hernia, and the first I had seen performed.

I never saw a case of hernia during my hospital attendance; and, though long in practice before this case happened, never met with one which I was not able to reduce. Anatomical knowledge is indispensable, and directions how to operate are all very good; but it is a very different thing to operate in diseased and displaced states of parts and in healthy relations, and undisplaced parts, in the dissecting-room; and authorities give their instructions much more from the dissecting, than the operating table, which I think leaves the student very unfit to cope with this disease, unless he has frequently seen cases operated on.

On this account I believe it better for patient and surgeon, that an experienced operator should act in such circumstances, than that every one should operate on his own patient. Some are so jealous they will not submit to this, and are thereby obliged to depend a great deal more during the operation on the advice or assistance of a bystander, than their own knowledge or dexterity. But, while such is my belief, and by their conduct the belief too of all but a very small minority of practitioners, every one, and especially those in remote districts, aboard ship, and such like, who must rely solely on themselves, and be solely relied on, have a bounden duty to prepare themselves for all the exigencies of this disease; and not, as has too often happened, either bungle the procedure, or leave the patient untouched, to his fate.

In the case just stated, the first called practitioner did not even recognize the existence of hernia; and, from my want of observation, I was unnecessarily alarmed at what is very often met with in strangulation of considerable duration, viz. a fetid state of the secretion generally present in the sac; and from inability to distinguish the sac, or rather to recognize it, I hazarded, though it otherwise turned out, either returning the sac unopened, and probably keeping up the strangulation, or opening the intestine instead.

I am aware I was guilty here of what I have just been censuring in others, viz. operating without possessing experience; but though inexperienced in hernia, I had previously had considerable practice as an operating surgeon, and, wishing to perfect myself, had to begin sometime.

Case 13.—An elderly woman had strangulated femoral hernia, and had been ill for several days before calling Mr. W. Reid, Canning Street. This, I think, was only my second case, but, benefitted by even the limited observation of my first one, I easily reached the strangulated intestine. It did not appear greatly injured, and was therefore returned, when, to our horror, fœcal matter slowly oozed from the femoral opening. Severe abdominal pain, with collapse, soon came on, and the patient rapidly sank.

Case 14.—A gentleman, late on a winter night, solicited me to accompany him to the country, to see his mother, who had been nearly a week ill, and attended by a surgeon. From the description I was certain she had strangulated hernia, and therefore asked the late Mr. Douglas to go with me.

The patient did not appear exceedingly ill. The surgeon had oftener than once, on different days, employed the taxis, and after failure to-day, left, stating he would return to-morrow. The time the patient had been ill, and the failure of the taxis by the attendant, forbade its repetition. Evidently the only chance for life we could offer was by operation. We were averse, however, to operate in the absence of the attendant, while his distance, the uncertainty of finding him, and the necessary and injurious delay, made us waive all considerations of etiquette.

We found a small protrusion of dark reddish-brown intestine, which not showing any conditions certainly indicative of the impropriety of its return, was gently replaced. No sooner was this done than fœcal oozing took place exactly as in the former case. Great increase of abdominal pain, with quick, small, rapid pulse, immediately came on, and during the following day the patient died.

Case 15.—Mr. Steven, surgeon, Tollcross, requested my attendance on his patient, Miss ———, who had had strangulation of a femoral hernia for six or seven days. As nothing in our opinion but the operation could save her, and as there was no decided contra indication, I operated, and, as in the former instance, found a small knuckle of dark-coloured intestine. After division of the stricture, and as careful examination of the *strictured part* as could be obtained, it was allowed to slip into abdomen.

Again, the untoward fœcal discharge alarmed us, and not without reason, for in place of the almost immediate relief following a successful operation for hernia, the patient got rapidly worse, with similar symptoms, as in the former instances, and died in twelve or sixteen hours, if I rightly recollect.

Without doubt, the fatal issue in those three cases was occasioned by the operation having been too long delayed. Thereby death of the portion of intestine grasped by the stricture was allowed to occur, and the instant the pressure was removed, the distention from the contained matters, caused the sloughed parts to give way, and the contents to be poured out.

These cases of course strongly point out the danger of postponement; the impropriety of any procrastination after fairly exhausting the taxis. But it may be urged, that the sloughing should have been observed by the operator, and its effects obviated; that after division of the stricture, the intestine should have been gently drawn down, when the sloughing would have been observed; and that, according to its extent, the intestine either should have been opened, retained to external wound, and an artificial anus promoted, or the sloughed portion included in a ligature as in wounded intestine, and returned into abdomen. I see it contended by some, who most absurdly draw inferences from single examples, that there is no risk of escape of intestinal contents into abdomen from wounds in intestine, and therefore no occasion for ligature or stitch of any kind. They contend, that the equable pressure is the temporary, and agglutination by lymph the permanent means of preventing any escape; but they forget the resistance is not equable as well as the pressure, the wounds allowing escape as in the cases detailed.

In all the cases the intestine was drawn down, but it appears not far enough for observance, if discernible, of the sloughed, or it may be ulcerated line. And let it be remembered, that in drawing down the intestine, the very danger desired to be avoided is apt to be induced, so that much caution and gentleness are requisite.

In some instances, from the hernial opening being large, and the protrusion voluminous, no sooner is the stricture divided, than congestion of the protruded parts diminishes; their contents, flatus or fœces, or both, no longer confined, pass along the canal, plenty of space is obtained, and the intestine can be easily and largely brought into view. Nevertheless, all things considered, no danger can surpass that of escape of fœcal matter into peritoneal cavity: therefore all others are to be met to avoid this; and I believe it should be an established axiom not to return intestine until the strictured part has been *seen*, and it has been ascertained whether or not it is in such condition as likely to retain its contents.

No post mortem examination was made in any of the cases, and, it may be urged, the intestine was opened by overlapping of the protruded parts on the director, so generally occurring, and difficult to cope with, and consequent wound of the intestine by the knife. That this did not happen I am certain, because the escape of fœces did not occur at the moment of division, but after the return, when the sloughed or ulcerated intestine had lost the support of the stricturing part.

I have all along been proceeding on the supposition, that examination will enable us to decide whether the strictured part is, or is not, likely to remain intact; but on this point I require more experience before deciding. I suppose a very small escape of fœces into peritoneal cavity is sufficient to destroy life, and that there will not be much likelihood of success from searching for the portion of bowel which has been returned and has given way. But still, the chance should not be thrown away, and, were the like again to occur to me, I would, by the fingers or forceps, attempt to withdraw the opened intestine, treat it according to the extent of its lesion, and thus, as far as practicable, reduce the danger to the smallest possible degree.

(To be continued.)

VI. *Berlin, its Medical Institutions, Medical Professors, &c.* By William Hales Hingston, M.D., L.R.C.S. of Edinburgh, Honorary and Corresponding Member of the German Medical Society of Paris.

It is often a question as to which of the Medical Schools of Germany holds the highest rank. The question is one of importance, as it has frequently to decide or regulate the time to be spent in each, by those seeking professional education. Yet is it one which cannot be answered *generally* or definitely. Thus, Prague and Vienna have long held pre-eminence in midwifery. More recently, medical pathology is a branch which has been cultivated with great success in the latter. Physiology has made rapid strides in Berlin, Wurtzburg, and Bonn; Giessen has advanced chemical science, &c. &c. But, when speaking of *surgery alone*, the question is divested of most of its difficulty.

In this department of science, *Berlin* has for some time stood pre-eminent, and still claims the foremost rank. During the residence here of *Graeffe*, surgeons and students from all parts of the continent, and many from Britain and America, were attracted to the Prussian capital. His world-renowned successor, Dieffenbach, added new lustre to the chair—already famous—until death removed him also from the scene of his usefulness and success. It was here tenotomy was first extensively and successfully practised.* It was here, also, Rhino-plasty was first given to the world. Graeffe's success in practice was very great. Dieffenbach's memory is still fondly cherished by the great mass of the people. Indeed it would be difficult to conceive greater affection for one nearly four years dead. The rich speak of him in terms of fondness, respect, and praise; the poor mention his name with reverence. Like John Hunter, his death was sudden and unexpected, and took place in the theatre of his greatest usefulness. One day when seated on a sofa, observing a student making an examination of a patient, he quietly expired. He was attended to his final resting-place by thousands. His *requiem* was the prayers and lamentations of those to whose comfort he had ministered.

Dieffenbach was succeeded by Langenbeck; but I shall mention the present surgeons in connexion with the various institutions to which they belong.

The University.—A very fine building, built by Fred. Wm. III. opened in 1810, when, by order of the Prussian government, or rather the king, the university was removed from Frankfort-on-the-Oder to its present situation—Berlin.

At first the number of students who were attracted to the Prussian capital was not very great, for although professors of acknowledged ability were here to be met with, yet the advantages afforded to military over civil students proved extremely distasteful to the latter, and prevented many from attending its sessions.† By a wiser policy of government, by gradually yielding to the wishes of the people, and by granting to civilians all the privileges they accorded to others, the university began to flourish. At the present moment it numbers 2,200 *matriculated* students; of these, about two-ninths are medical.

---

* Tenotomy (by subcutaneous section) was first practised by Stromeyer of Kiel; but to Dieffenbach is due the credit of having brought it prominently before the British public.

† These remarks apply only to students of medicine. On those studying arts, law, or divinity, were placed no restrictions, for such are not usually educated for the army.

There is no school in Germany where so many students are collected together. Prague, the oldest, has 1,272; Munich, 1,957; Bonn, 866; Wurtzburg, 722. It would occupy too much space to enumerate all the German universities, amounting to twenty-four, and their statistics. I have mentioned these merely to show the flourishing condition of the one about which I am writing. Labour is there divided among the various professors in their several departments. In theology there are five ordinary, and four extraordinary professors, besides two *privatim docentes*. In law, nine ordinary, four extraordinary, and three *privatim docentes*. In the department of medicine there are eleven ordinary, six extraordinary, and nineteen *privat. docent.* In philosophy twenty-seven ordinary, twenty-nine extraordinary, and thirty-one *privatim docentes*. In modern languages five.

The largest building for the relief of the sick is the Charité. It does not belong to the university. It was built by Fred. Wm. I. entirely for the education of surgeons for the Prussian army. It continued as such till 1810, when the university was brought from Frankfort-on-the-Oder to Berlin. Previous to that time there were professors of the Military Academy, who gave lectures to young men studying for the army. In 1810 the professors of the university were allowed wards for their *clinique*, and students then matriculated. In 1848 government made still greater concessions, by permitting civilians to become assistants to the professors in *one* medical *clinique*.

The *Charité*, governed by two directors, one medical, and one administrative, is divided into old and new. In all, it contains 900 beds, but could accommodate nearly double that number in urgent circumstances. The new contains all the syphilitic patients, insane persons, and prisoners, and also those sent from the prisons. The old contains medical, surgical, and obstetrical cases, and children.

From the medical wards, four are selected for the clinique, two male and two female, one for each professor. From the surgical are taken four wards for clinique, two of which are for opthalmic surgery. These are attended by the same professor. Drs. Schoenbein and Wolff are the professors of medicine. The former, although pretty well advanced in years, is still active. From *œdema glottidis*, or some other affection of the throat, he is with difficulty understood. Strangers to the language, or those who do not understand it thoroughly, will derive no advantage from attending his instructions, as a large portion even of his own countrymen find great difficulty in following him. His therapeutics, however, are excellent. He has been the king's physician for years, and is highly esteemed by the profession. A work appeared many years ago, under the title of "Therapeia von Schoenbein," but he denied the authorship. I believe some students had taken notes of his lectures, and published them in a continuous form. His assistant, *Dr. Traube*, devotes several hours a-day to giving instruction on auscultation and percussion. He has written many excellent papers; one in particular, on "*Critical Days*," is highly valuable. Inenken is the professor of surgery. High praise cannot be bestowed either on his operations or after treatment; tedious in the former, meddlesome in the latter. He has been rather unsuccessful in the administration of chloroform. *On dit* that he has lost seven patients in this way. As it is an *on dit* it might be well to take it *cum grano salis*. I saw a patient in January last, from whom he was removing the orbit, expire on the table. Inenken attributed the death to the shock of the operation, as he had done on previous occasions. This theory he has endeavoured to maintain publicly, in opposition to Langenbeck, but much against the notions of the profession generally. As an oculist, Inenken holds, and deservedly too, a very high rank. He operates on the eye with care, dexterity, and precision. His diagnosis is almost infallible, his after treatment good. He still holds to the old operation for cataract—the low incision. In this respect I believe he stands alone.

The obstetrical department, by a very unwise and prejudicial arrangement, is open to students only in the summer season, and to midwives in the winter. There are but thirty beds, which are seldom fully occupied. About 400 births take place in the year. Berlin makes no pretensions to midwifery; her claims are more easily substantiated in consequence. Young military surgeons are the resident *accoucheurs* in this branch.

Dr. Simon has the charge of the syphilitic patients. He is also lecturer on syphilis and diseases of the skin in the university. His works on those subjects bear evidence of considerable research. The females in the syphilitic wards are examined three times a-week, the men twice. Those who have witnessed the examination of females in the hospitals of Britain, might be somewhat shocked at the manner in which patients are required to mount the steps, and uncover their person from the abdomen downwards. This is both extremely indecent and demoralising, the more so as it is unnecessary.

Apart from the *charité*, and in connexion with the university, are three *cliniques* for medicine, surgery, and midwifery. They are all supported by government, and consequently admit patients from all parts of Prussia. Dr. Busch is the professor of midwifery. He is not much seen by the students, except at lecture. He has gained his laurels, and now seems to enjoy his *otium cum dignitate*. Besides these, there are *polycliniques* for each of these branches. Those patients who are not desirous of entering hospital, can be attended at their own houses by the students, and, when necessary, by the assistants. In the hospital of the university about 300 births take place in the year; in the polyclinique between 800 and 900.

It was in the polyclinique in Ziegel Strasse that Graeffe gave instruction. It was here, also, where Dieffenbach held forth. And, what is still more to the purpose, it is here that Langenbeck may be seen daily, with a large number of cases for consideration. In no clinique I have yet visited, have I seen so many operations as are here to be witnessed. The hospital is not a large one, but only such cases as demand operations are admitted. Almost every day, persons in the city and neighbourhood are brought to be operated upon, and carried back again to their respective domiciles. It has been stated that there are more operations performed here than in any hospital on the continent. Certainly Paris has nothing to equal it. The reputation of the operator draws to the capital persons from all parts of Prussia and surrounding duchies. As a lecturer and teacher, Langenbeck is considered superior to his predecessor. As an operator, inferior in no respect. His intimate knowledge of anatomy is surprising, while he is equally proficient as a physiologist. He is particularly distinguished for his heroic treatment of *anchylosis* of the knee and elbow. As I have not seen any similar treatment in British hospitals, I will occupy a few lines in speaking of anchylosis generally.

In the words of Cooper, anchylosis denotes an intimate union or growing together of two bones, which were naturally connected by a moveable kind of joint. In the *true*, the bones grow together so completely, that not the smallest degree of motion can take place, *and the case is positively incurable.* In *false* anchylosis the bones have not completely grown together, and their motion is only diminished, not destroyed. Anchylosis is generally looked upon as a favourable, and in many cases a desirable termination of inflammation or ulceration. It is thought to be as near an approach to health as it is possible, under many circumstances, to attain, or, in the words of Miller, it is a compromise between health and disease. Cooper remarks, "No attempt should ever be made to *cure*, though every possible attempt should often be made to *prevent* a true anchylosis." The exertion to prevent, he further adds, is not always proper, for "many diseases of joints may be said to terminate when anchylosis occurs."

With such authority before us, and the authority of many more I might quote, it would require no small amount of courage to interfere with what has been designated "a favourable termination," "a desirable termination;" and a surgeon who would undo this wise provision of nature, might be pronounced reckless and bold. I confess that such would have been my own opinion had I read, and not seen, the treatment—the successful treatment, of *true*, and in many cases long standing, anchylosis, by breaking up the callus. This mode of practice is not novel. It was tried many years ago in France, but the result of these experiments was such as to discourage others from repeating them. Violent inflammation of the joint, and the most disagreeable consequences, generally followed; and the patient was left in a worse condition than previous to those experiments. But the French erred greatly. Instead of breaking up the callus gradually and cautiously, they restored the perfect flexion and extension of the limb immediately, and then kept up the motion of the joint, in order to free the condyles of their abnormal adhesions. As already remarked, the consequences were frequently very serious. The majority of surgeons would not follow the example, and writers on surgery only mentioned this mode of treatment in order to caution the profession against adopting it.

The practice so successful under Langenbeck, and which has given rise to those remarks, consists in breaking up the callus certainly, but in a manner very different from that employed by Louvrier. The patient is placed upon his back, and chloroform administered until complete anæsthesia is induced; until, in fact, *the muscles cease to offer any resistance.* If the anchylosis be of the knee (the most favourable joint for the operation) an assistant, or assistants, fix the pelvis, and the surgeon commences gradual flexion, if the joint be in an extended state, or extension if in a flexed state. The force to be employed must be regulated by the surgeon himself. In cases of many years' standing, the force required, as might be supposed, is considerable; sometimes the whole weight of the body is necessary, but it must always be applied with care. When the callus yields to the external force, the amount of flexion is preserved until the next trial, the limb being exercised, passively, during the interval. A great degree of flexion is not to be desired at once; and the more cautiously and patiently the limb is managed, the less danger of violent reaction, and the greater probability of success. Indeed, this constitutes the great difference between the treatment of Louvrier and that of Langenbeck, or between failure and success. When managed with due care, the inflammation set up is very trifling, indeed seldom sufficient to retard the cure. Frequently no reaction is perceptible. Every two or three days the patient is again subjected to the same treatment. Sometimes a couple of months are necessary to restore the function of the joint perfectly, but three or four weeks are frequently sufficient. Although many years may have elapsed between the occurrence of the anchylosis and the attempt at restoration, yet in most cases the callus may be broken up, and the integrity of the joint restored. It is absolutely requisite, however, that the patient should exhibit no tendency to scrofula, and this the more especially if the anchylosis be the result of scrofulous inflammation or ulceration.

From the want of exercise of the joint, the limb is usually much smaller than the sound one. Sometimes almost total atrophy of the muscles is the consequence, but a short time suffices to restore them to their original volume. In concluding these remarks, I feel perfectly justified in supporting the claims this mode of treatment has to be admitted among the regular operations of surgery. And as anchylosis, as a result of disease of, or injury to the joint, is unfortunately of frequent occurrence, any mode of alleviating the subjects of it should obtain a fair trial, especially when supported by experiments.*

In the same building in Ziegel Strasse, Romberg holds his *clinique*. He is particularly distinguished for his treatment of nervous affections. His admirable work on diseases of the nervous system, said by some to be somewhat unintelligible, has been translated into English, and is no doubt familiar to many.

There are several private institutions for the education of young men that have no support from government, the professors of which are recognized by the university as *extra* academical professors, or "*privatim docentes.*" I will only mention those of excellence.

In the Orthopædic Institution of Dr. Buehring, almost every kind of deformity may be seen, and an infinite variety of apparatus. A few months' attendance will suffice to show the most sceptical, the great advantage which frequently attends the judicious employment of mechanical means for removal of deformity. I have there observed, and only there, curvatures of the spine in young girls, deformities of the femur, &c. &c. brought back to their original condition, while, at the same time, the young patients were daily improving in health, and they have finally left the hospital with rosy cheeks and robust health. The Doctor confines them to the horizontal posture, only three or four hours daily. Some of his little patients have been with him twelve, and some eighteen months. Buehring has strongly advocated the bringing together by force of the two superior maxillaries in congenital absence of the hard palate. He was the first to practise and recommend this operation. Dr. B. is a nephew of the late Dieffenbach, and edited his work on operative surgery, which appeared shortly after his death.

Dr. von Graeffe has a clinique for diseases of the eye. A great collection of cases may be seen at almost any hour, but especially from 9 to 11 A.M. He enters very fully, when occasion presents itself, into the physiology of the eye, and the laws of optics. I may mention the treatment of ulcerations of the cornea by the solution of atropine, which I have seen applied almost daily, with the greatest success. It is not necessary to allude to all the remedies recommended. Nitrate of silver in substance, weak and strong solutions, and sugar of lead in powder, weak and saturated solutions, seem to be the favourites with the profession. Jacob, in his Essay on the Morbid Anatomy of the Human Eye, p. 367, says that caustic sometimes becomes permanently fixed, and constitutes an indelible dark speck. The same author, p. 369, makes an equally grave charge against the use of acetate of lead. He says that the obstinate and intractable nature of some ulcers, whose surface presents an opaque white colour, is due to the employment of the acetate of lead. He seems to think that the acetate is decomposed, and that a white precipitate is deposited in the ulcer, to which it adheres tenaciously, and in the healing becomes permanently and indelibly imbedded in the structure of the cornea. To atropine in solution there can be no such objection. It cannot leave any dark speck or precipitate to be imbedded. Whether it exerts a specific action on the ulcer, or acts indirectly through the capillaries, I cannot say; but certain it is, that ulcers have been found to heal under this treatment much more rapidly than under any other local application. I merely mention the fact, and leave it to others to determine its action. Dr. Graeffe employs it also in conjunctivitis. Dr. G. is son of Dr. G. whose name I have already mentioned. The money left by his father enables him to support an hospital at his own expense. His acquaintance with French and English, and his desire to impart instruction, by speaking in either language when necessary, renders him a favourite, and his clinique is much frequented by persons speaking these languages.

---

* I have devoted more time to this matter than I originally intended; but as it is an important one, and the mode of treatment peculiar to Berlin, I thought it entitled to more than a passing remark.

The following are not intended for the education of students:—

Bethanien—founded by Frederick William IV., and opened in 1848, for the education of Protestant sisters of Charity as nurses, (Diakonissen), who here serve a novitiate of one year before becoming "sisters." Those sisters are not composed of the lower classes, but frequently belong to the first families of Prussia.* Unlike the sisterhood of the Roman faith, they pledge themselves to a life of celibacy but for five years, at the end of which, if Providence has thrown in their way some likely fellow, they can doff the modest gray and white; if not, they may renew their vow for other five years, or for life. They are paid a trifling sum yearly, barely sufficient for clothing. They frequently serve in other hospitals, and in the city, as nurses. The proceeds of their services is paid into the treasury of the Bethanien, and they return to their *Mutter Haus*. Like most establishments, where sisters of charity are nurses, everything is very clean, and kept in the best order. The hospital contains but 300 beds. I have seen three times that number confined in a smaller space. The roof is high, windows large, rooms light and cheerful, floors beautifully polished, passages heated with air, by pipes brought from the furnace. There are also pipes to convey away the foul air, and introduce fresh. Each ward contains from 12 to 16 beds, having sometimes the length of a bed between them. There are four physicians and surgeons. The directress and apothecary are both females, elected from among the *Diakonissen*.

---

* The Countess of Stolberg, recently married from this Institution, had been a nurse for many years.

Elizabethean—for diseases of women, generally contains 90 beds—also attended by sisters of charity.

Kinder Hospital—for children of from 1 to 12 years of age.

Armen Haus Hospital—for vagrants, drunkards, incurably sick, incurably insane, and prostitutes, who are all kept separate. It contains 1,000 beds, which are pretty well occupied in winter, but in summer rather empty.

Before taking leave of the various hospitals, I feel bound to mention, in the warmest terms, the admirable appointments that distinguish them. Most of them are fitted up with every care to the comfort of the inmates, some of them with elegance, at least elegance as compared with what we usually meet in institutions of a like nature. The most casual observer cannot fail to notice the very great cleanliness and comfort that reigns throughout. Light, airy, cheerful—one might easily forget he was in an hospital—they form an excellent contrast to the dark, dreary, dismal, overcrowded and ill-ventilated dungeons of the so-called head of affairs medical—Paris; for there, as in many parts of Britain, these are luxuries to which the eye is unfortunately not much accustomed.

When writing of medical affairs in Berlin, it will not be out of place to mention some of the most striking features that distinguish the medical police of Berlin, and Prussia generally; for the same wise and salutary laws for sanitary purposes, are applicable to the whole Prussian kingdom. I select Berlin for the sake of convenience merely. It is divided into a number of wards or sections, each of which is attended by a medical man, who is paid a regular salary for attending to all those residing in his section, who may require his services. His prescriptions are sent to an apothecary, who charges the medicine to the town, and the poor are thus free of expense. All tradesmen, engineers, blacksmiths, carpenters, &c. are compelled to pay a small sum weekly when in service, for the help of their own sick. This originated with themselves, in a bond resembling Odd Fellowship, but has now become a law. The tax is regulated according to their wages, and is deducted from their weekly pay.

There exists another society, which is not fully under the surveillance of the police; and which, on account of its independent nature, stands great chance of being broken up. This is the Hygienic Association. It numbers upwards of 10,000. Members, by paying two groschens (about 2¼d.) monthly, receive the services of a medical man during health and sickness.*

---

* This association has since been demolished by the police. It was thought that

It is necessary to announce the birth of every child to the police, and to state whether born healthy or diseased. After some months it must be vaccinated. For this purpose there are institutions in every town, and at convenient distances in the country. Every Prussian must serve three years in the army, and when enlisted he is re-vaccinated. No person is employed in any service, civil or military, without certificate of vaccination.

There are a few houses licensed by the city, which are visited twice a-week. If the police have reason to suspect that fair damsels receive the nocturnal visits of persons *illegitimately*, they are waited upon and examined, and compelled to go to the Safety Committee. The detection of these is rendered easy by the fact that all licensed houses are situated in a certain quarter of the city, the *Koenigs Mauer*, and the inmates are not allowed to extend their haunts beyond it.

I may here remark that the medical police are in connexion with, but over the town police.

Besides the physicians already mentioned, there are eight for the city, whose duty it is to visit manufactories, workhouses, gaols, boarding-schools, &c. to see that the inmates have comfortable apartments and sleeping rooms, sufficient clothing, and food of a proper quality; that they have their regular hours of recreation, and that they are not tasked either in work or study beyond their strength.

Physicians must announce to the police all the cases of cholera, small-pox, epidemic dysentery, or supposed infectious disease, that may occur in their practice,—scarlatina and measles excepted. They must also give to the parents or friends of any one dead in their practice, the date of death, and the name of the disease of which he died. Every week a list is published of all the deaths, with the diseases subjoined. The names of the deceased are published in connexion with the church to which they belong.

I shall now notice very briefly the curriculum of the study of medicine in Prussia.

Before being allowed to matriculate, students are compelled to undergo an examination in classics, French, mathematics, history, and German literature. They have to write a thesis in Latin and German, on any subject given them. The principles of philosophy, logic, and metaphysics, are also entered into. This past, they are admitted to the university. Their study must extend over a period of four years, or eight *semestres*, four of which must be in a Prussian university. At the expiration of two years, they are examined in physics, chemistry, botany, zoology, mineralogy, and some branches of philosophy. This examination is necessary before proceeding with further studies. These examiners are not connected with

---

the principles of Hygiene they wished to introduce, extended even to government; that it was in fact a secret political society.

the medical faculty. At the end of the four years, they are examined by the medical faculty.

The examination commences with a thesis prescribed by the dean of faculty. When written and approved of, the dean, who is annually elected from among the professors, examines the candidate on medical subjects generally. If successful, each professor examines him in his particular department. This is called *examen rigorosum*, but in comparison with what is to follow it is not rigorous. He has then to write a thesis in Latin, and print at his own expense, a sufficient number of copies to enable him to send one to every university in Germany, and three to each professor or teacher attached to the university to which he belongs.* This thesis is impugned, and must be defended against three adversaries. The debate, which is not usually very animated, is conducted in Latin, and is public. This over, the title of M.D. is conferred.

But in order to be enabled to practise, a *staats examen* or *cursus* must be undergone. It commences about six or twelve months after, but may be deferred as long as the candidate wishes, and usually lasts five or six months. In this *cursus* the following branches are gone over: anatomy, surgery, medicine, and midwifery. In clinical medicine and surgery, the candidate from time to time receives patients, and in presence of professors and students makes the diagnosis, offers a prognosis, and prescribes the treatment. He is then locked up, and has to write a complete history of the disease. In midwifery the candidate makes an examination of several women, and states the stage of pregnancy, &c. He has also to make deliveries in presence of the professors. On the dead subject, he has to go through all the operations—amputations, ligatures, &c. besides the more elementary parts of surgery, bandaging, &c. In anatomy, the candidate is required to make a preparation of any part given him, and of any system.

The *staats examen* from beginning to end is conducted by lottery. The candidate draws from a number of others a paper, on which is written what is required of him. He draws in each branch separately.

VII. *On the Utility of a Skeleton Articulated with Caoutchouc, as an Aid in Illustrating the Diagnosis of Dislocations.* By George Buchanan, A.M., M.D., Demonstrator of Anatomy in Anderson's University, Glasgow.

WITH TWO DRAWINGS.

THE maxim that a practitioner of medicine should never cease to be a student, has at no time been truer than at present. The discoveries of the chemist, anatomist, and pathologist, are elevating the science stage by stage towards the certainty of the exact sciences. It would be out of place to do more than mention the advances which have been made in organic analysis, and the new fields of research which have been opened up to the histologist, by the use of additional and more perfect means of investigation. These, while they enable us to correct previous erroneous ideas, and to acquire fresh knowledge, demand increased study on the part of the medical observer. He who would keep in the foremost rank, must master each addition as it is made, for a short remission is sufficient to stamp him as a lagger behind, and to make him feel tripped up, so to speak, by his contemporaries or immediate successors.

---

* About 300 are necessary.

Amidst this onward movement, it seems the duty of medical teachers in every department to scrutinize and arrange the new facts, to give a concise and clear idea of what is already known, and to indicate the direction in which recent discoveries are pointing. In every branch of medicine this is becoming a matter of increased difficulty for the teacher to impart, and for the student to acquire; for the additional information which must be given by the teacher, has to be included in the space of time which was formerly considered no more than sufficient, while the student finds that he is compelled to overtake, in a very few years, an amount of study which is truly overwhelming, and can only be properly mastered by those of great perseverance and talent. Now, if a student had plenty of time to examine minutely and in detail every subject of importance and interest, he would, in most instances, have little need of any assistance. Lectures might give place to private study; chemical lectures might be supplanted by laboratory manipulations; anatomical lectures by private dissections; lectures on medicine and surgery by the observation of disease in hospital and dispensary practice. And there is no doubt that *towards* this method the teaching of the present day is tending; for, however much one school or hospital may vaunt its superiority, it is matter of observation, that the study of disease by clinical instruction and otherwise is gradually assuming its proper position. But it is obvious that such a plan of study cannot admit of general application, even if the student had sufficient steadiness of purpose to carry it out; for when once fairly embarked on his course, he is hurried on from one subject to another, with a rapidity which prevents a deliberate attention to one, unless it be at the expense of the other. For instance, it would be folly for a student to attempt to acquire a competent knowledge of anatomy, from books and dissection, in the space of time that can be allotted to it among his other studies. It devolves upon the teacher, therefore, to compress into a limited space the most important truths connected with his department, and to present these in such a form as will be understood by all classes of students. This has led to the use of all sorts of aids in teaching;

preparations of various kinds, diagrams and drawings, models in wax and other substances, especially of such parts as are either invisible to the naked eye, or so small as to be scarcely discernible at a short distance; all which are of service in giving an idea of the structure under consideration, and enabling the observer to understand it more easily, when examining it afterwards closely, or with the aid of the microscope. The same remarks are applicable to the study of many diseases. Although there is no doubt, that a diagram or model of such a state of parts as is presented by a dislocation or a hernia, can never be compared, in practical utility, to an examination of a case of one of these affections, still, until such an opportunity is afforded, the artificial representation is a great addition to a mere verbal description, and is useful for reference and revision, after the actual disease has been seen. The few remarks which follow this rather lengthy apology, refer to one of these aids in teaching, which might prove of great service if introduced into the anatomical, surgical, and clinical lecture rooms.

Amongst the diseases which are brought before the notice of the student at an early period of his study, are the various dislocations; because, in describing the normal anatomy of the joints, it is customary for the teacher to advert to the displacements to which they are liable by accident; besides, the frequency of these, and the necessity of prompt treatment, are forced on his attention soon after he joins the hospital. Although in a vast number of cases, the displacement, when such an accident has happened, must be apparent to the most casual observer, yet, in not a few, the diagnosis is attended with considerable difficulty; and in most, the exact situation of the displaced bone, and above all, the forces which tend to change its position, and hinder its replacement, are sufficiently obscure to cause great uncertainty in the mind of a beginner. A previous careful examination of the normal anatomy of the joint, will do much to remove the difficulty, when a case is actually presented; but until such an opportunity is afforded, a student's idea of a dislocation is by no means clear and decided.

Reflecting on the various preparations of joints in common use, it occurred to me that a great improvement might be effected, by the introduction of some elastic substance, the contraction of which would represent the action of the muscles. Accordingly I had a skeleton prepared, with straps of vulcanized India rubber, so disposed around the joints as to simulate the action of the muscles while the limb is at rest, and to imitate the direction in which they pull upon the bone when the position is altered. The result has been much more satisfactory than I anticipated, and the preparation has proved of the greatest service. Most of the important dislocations can be imitated with the utmost nicety, and a single glance at the skeleton, with the bone fixed in its abnormal position by means of the artificial muscles, is far more telling than the most accurate description. An artificial dislocation being produced, it is easy to notice the forces which act on the bone in its new position, and the direction in which the limb should be extended, in order to overcome these. In fact the whole *rationale* of the accident and its treatment, are presented to the mind in the simplest manner. One or two examples will be sufficient to show its utility.

In the shoulder joint, the head of the humerus is retained in apposition with the glenoid depression, mainly by the tonic action of the muscles around it, for the capsular ligament is little more than a fibrous envelope proceeding from their tendons, and indeed is so lax that when the adjacent structures are removed, the bones can be separated to a considerable distance, the ligament still remaining entire. Although this joint enjoys a wider range of motion than any other in the body, the muscles which act upon it may be resolved into three sets, and the direction of their forces may be represented by three bands of the caoutchouc. One should be fixed to the upper surface of the clavicle near its scapular end, brought over the acromion process, stretched, and then attached to the anterior bicipital ridge of the humerus, near the surgical neck. (*a*) Such a band will represent the combined forces of the elevators, the upper fibres of the pectoralis major, the deltoid, the biceps, and the coraco-brachialis muscles, and will pull up the head of the bone towards the coracoid and acromion processes. A second piece of India rubber should be attached to the front of the sternum, between the articulation of the first and second costal cartilages; it should be put on the stretch and fastened to the bicipital groove of the humerus, a little way below the tuberosity. (*b*) This will represent the action of the pectoralis major, and partly of the internal rotator muscles. Another band should be extended from the base of the scapula, just below the spine, to nearly the same point of the humerus as the last. (*c*) This will act in the line of the depressors, and external rotator muscles. The triceps has not much power over the motions of this joint, and its action is sufficiently represented by the weight of the limb. When these bands are properly stretched, as the arm hangs by the side, the bones of the joint will be found in their normal relative position. In the skeleton, as usually constructed, the bones are separated by the hinge or joining, nearly a quarter of an inch, in order to allow freedom of motion, so that the prominences, which are the landmarks in detecting dislocations, are not seen in their proper position, but by the bones being kept in perfect apposition, the exact shape of the joint is preserved, while the utmost freedom of motion is permitted by the elasticity of the material employed. When the joint is dislocated, the bands give an excellent idea of the action of the muscles. The head of the bone being pushed back on the dorsum of the scapula, the posterior band holds it there, the upper one pulls it up towards the spine, while the front one has little action. If the arm is held straight out from the body, and a slight downward stroke given to it, the ease with which dislocation into the axilla can take place is at once seen. When this dislocation has been produced, the prominent features of it are well marked. The upper band pulls the head against the neck of the scapula, and at the same time tends to raise or abduct the arm, while the other two pull it inwards against the ribs, and thus the elbow is kept projecting slightly from the side, showing one of the well-known signs of the accident. A slight twist or shake, will loosen or dislodge the bone, and enable the bands to act more forcibly upon it, so that the consecutive dislocation of its head, upwards between the coracoid process and the second and third ribs, which not unfrequently happens if reduction has not been accomplished soon after the occurrence, can be seen taking place. In these, and similar instances, the bands kept on the stretch will indicate the muscles which help to produce or retain the abnormal position, and point out the direction in which force should be applied, for the purpose of overcoming their action. True, there are only three bands, and these do not indicate the individual muscles; but they show the group which acts in one direction, and that is all that is required, in directing the force for the reduction. Another phase in the treatment is well brought out, namely, the necessity of waiting till the muscles have been well stretched, before attempting to push the bone into its proper place.

It may be said that all this can be easily enough explained in words; but no explanation could give the distinct idea, which is at once conveyed by an examination of the dislocation, imitated as closely to nature as possible.

The hip joint is admirably represented in this skeleton. The motions of this joint are not so free as those of the shoulder, although they are performed by a greater number of muscles. In order to represent the groups of muscles which move it, the following bands of India rubber should be attached:—One from the great trochanter, to a point on the dorsum of the ilium, nearly straight above it. (*d*) This will represent the action of the glutei. Another from the body of the pubis to the lesser trochanter, to represent the action of the psoas and iliacus, and direct flexor muscles. (*e*) Next, one from the ramus of the ischium, to a little below the femoral attachment of the last, indicating the adductor group. (*f*) Lastly, the external rotators may be imitated by a strong band placed in the line of the pyriformis muscle. When these are well stretched with the weight of the limb, the bones are kept perfectly close, and the relation of the trochanter to the adjacent prominences of the innominate bone can be exactly ascertained, while the joint can be moved in any direction.

Although the position of the head of the bone can be very well exhibited with a femur and pelvis, yet the most characteristic marks of the accident have to be imagined; while, on a skeleton of this kind, with one side normal and the other dislocated, the altered position of the head and trochanter, length of the limb, and direction of the toe, are shown with the most perfect accuracy; the *tout ensemble* of the affection is presented to the eye at one view.

The muscles of the ginglymus articulations, as the elbow, knee, &c. are easily represented by four straps, one before, behind, and on each side, if the ligaments are strong. The use of the skeleton might be illustrated by a description of these and other joints; but I think that enough has been brought forward to show that, though savouring somewhat of the Marionette, it may be of great service in teaching anatomy and surgery, as it has been for the last two years in Anderson's University.

VIII. *Narrative of a Case of Poisoning by Aconite and Belladonna, with Remarks.*

By J. A. Easton, M.D., Lecturer on Materia Medica in Anderson's University; one of the Physicians to the Glasgow Royal Infirmary, &c.

Instances of poisoning by the narcotico-irritants being fortunately of rather infrequent occurrence, I deem it an incumbent professional duty to submit the following narrative of a very painful case, in which death rapidly followed the administration of a small quantity of the tinctures of aconite and belladonna.

On Saturday, the 8th of last January, about half-past six o'clock in the evening, a young man, previously in good health, but suffering at the time from slight headache, called at a drug establishment in this city, to get advice about his casual ailment from a young medical student, with whom he had been for a considerable time on very friendly terms. In an evil hour for both, in which the life of the one was lost, and the happiness of the other was clouded, the medical student, who was in the second year of his studies, administered to his friend a draught, containing twenty-five minims of tincture of aconite, twenty minims of tincture of belladonna, and a drachm of the tincture of musk. What formula had been followed in preparing the tincture of belladonna I have not learned, but I know that the ingredients used in the preparation of the tincture of aconite were sixteen ounces of the root of the Aconitum Napellus to thirty fluid ounces of spirit. Shortly after receiving this potent, though most incongruous, mixture, the patient walked to a friend's house, about three-quarters of a mile distant from the place where he had swallowed the heterogeneous draught. And here, I think it right, before proceeding any farther, to direct especial attention to the fact, that this ill-fated young man did not receive his "cup of death" while at rest in bed, where there is much to counteract, or, at all events, nothing to encourage, the fearful energies of a virulent poison; I wish further to direct attention to the circumstance, that he did not proceed to bed immediately after taking the draught, but that, from the moment of its administration, till within half an hour of his death, he continued walking, or being jolted about in vehicles at a rapid pace along the rough streets of Glasgow, thereby affording every facility, so to speak, to the poisons to conduct their operations to a fatal result. The propriety of keeping this circumstance in view will be of service, when the result of this case is contrasted with the results observed in those experiments that were performed, some years ago, in a metropolitan hospital, on patients confined to the recumbent position, and tended by clerks and nurses, ever on the watch to descry the first indication of danger, and to avert a fatal issue by resorting to appropriate treatment. Most unphilosophical would it be to draw an exact parallel between, or to deduce any inferences from, effects produced under such totally different circumstances, for the veriest tyro in physiology is aware, that the power of the absorbent system is in the inverse ratio of the power of the circulatory system, and that whatever depresses the latter must of necessity promote the activity of the former.

Returning from this digression—which I cannot regard either as irrelevant or unimportant—and proceeding with the history of the events in the order in which they occurred, it must next be stated, that when the patient arrived at his friend's house, which he did at twenty minutes past seven, one at least of the poisons he had taken was exhibiting its deadly effects. For immediately on his entrance, he complained of "feeling *queer*," of being sick, and of experiencing a tingling sensation in his hands and arms, similar to that of "foot-sleeping." After remaining for a short period in the house in question, during which the symptoms increased in intensity—the hands and arms being now so "benumbed and powerless that when raised, he could not keep them up"—he thereafter walked again for about a quarter of a mile, and then was conveyed by an omnibus the rest of the distance back to the drug establishment, where he had swallowed the draught. He reached this place about a quarter to eight; while there, "he vomited freely, his speech was thick, and he staggered like a person intoxicated," though there was neither stupor, nor the slightest loss of consciousness. From the drug warehouse, the patient, accompanied by the medical student already referred to, and by another friend, was despatched in a cab to the residence of Dr. Lawrie, which they reached at half-past eight, about two hours after the draught had been taken. In detailing the history of the distressing occurrence to Dr. Lawrie, the medical student, horror-struck, confused, and agitated, gave, as may be supposed, but a hurried and imperfect account of proceedings in which he had recently performed such a melancholy part, and thus, in the hurry and agitation of the moment, led Dr. Lawrie to understand that twenty drops—not minims—of a weak tincture of aconite, had been administered along with the belladonna and the musk. By this time the patient was fully under the influence of the poison. He complained of a "general weakness of his arms and legs," of a sensation as if "they would drop off from his body," and of a peculiar feeling in the lips and cheeks, particularly in the left, in which, he said, he felt a loss of muscular power. No peculiarity was observed in the state of the pupils. The pulse was about 100, and consciousness was perfect. Believing that vomiting had not taken place to any great extent, Dr. Lawrie administered an emetic, and directed that alcoholic stimulants should be repeatedly and liberally exhibited. Having got these directions, the party proceeded, once more in a cab, from Dr. Lawrie's house, to the home of the unfortunate patient, which they reached at nine o'clock. The part of the history of this melancholy case at which we have now arrived, I shall give in the words of the patient's father:—"About nine o'clock in the evening of the day in question," says that gentleman, "I was sitting in my house, when the door bell was rung, and, on the door being opened, a call for assistance was made on the outer stair. Hurrying down stairs, I found my son sitting on the lowest step of the second flight of stairs, supported by two men. A gas lamp was burning brightly on the stair, and by its light I saw that my son was in a state of utter helplessness, presenting the appearance of a man dead drunk, although, from his previous habits of life, I never for a moment supposed him to be in such a condition. His head hung down on his breast, his arms depended loosely before him, while his legs were extended at length on the stair. Seeing him in such a helpless state, I exclaimed, 'What's wrong?' His reply was, 'Nothing; nervous or something,' or words to that effect. His voice was weak, and the effort to speak seemed to distress him. After we had carried him to a sofa in the house, he vomited freely, as he had done before while sitting on the stair." Shortly thereafter, convulsive movements took place in various parts of the body, the face became more deadly pale, and was covered with clammy perspiration, the pulse could not be felt at the wrist, and, at length, retaining his consciousness to the last, he expired at twenty minutes past nine, within three hours from the period at which he had swallowed the fatal draught.

The matter having been taken up by the authorities, Dr. Macgregor and I made a post mortem examination of the body two days after the death, and afterwards subjected the contents of the stomach to chemical analysis and microscopical examination. The results of these several investigations are contained in the following medical report, in which, as usual, we introduced as few technicalities as possible; for I may here be permitted to remind my professional brethren, that documents of this nature are not prepared for the edification of a medical society, but for the information and guidance of a court of justice:—*

"The veins of the brain were unusually congested, and serous effusion existed in great quantity in the middle covering of that organ. The lungs were gorged with very dark blood, and the right cavities of the heart were distended with similar fluid. The lining membrane of the stomach was of a dark red colour. With the exception of a slight thickening of one of the valves of the heart, the remaining viscera of the body were in a natural condition.

"The stomach having been secured at both ends by two ligatures, was removed to the laboratory of Dr. Macgregor, one of the reporters, where the contents of the organ were subjected to chemical and microscopical examination, in order that we might either verify or disprove the allegation in the warrant of commitment, that the deceased had died from the administration of tincture of aconite. Aware that the science of chemistry had not yet supplied a conclusive test for aconite, we availed ourselves more particularly of the microscope as a means of detecting the poison, though we did not neglect the application of nitric acid and other chemical tests, usually resorted to for the discovery of toxicological agents derived from the vegetable kingdom. Accordingly, from a trustworthy quarter we procured a quantity of the pure alkaloid aconitina,—the active principle of aconite,—and examined it under the microscope, but as this substance does not assume a perfectly crystalline shape, nothing more was observed than small masses of matter, dark in colour, and irregularly rounded in form. Thereafter, and by way of comparison, a drop of the contents of the stomach, previously filtered, concentrated, and otherwise chemically prepared, was placed under the instrument, and there can be no doubt that an appearance was presented exactly similar to that yielded by the genuine aconitina. But it would obviously be unjust to draw any conclusions from such a fallacious comparison, and imperfect mode of judging; and, therefore, we do not hesitate to declare, that while the chemical analysis failed to detect aconite in the contents of the stomach, the microscopical examination afforded *no proof* of its existence. On the other hand, it cannot be denied that the unnatural condition, already referred to, of the heart, lungs, and brain, was precisely such as would be produced by this potent poison, which operates as a powerfully depressing agent on the nervous system, and through it, on the respiratory muscles and the heart, thereby impairing, and ultimately subduing, these organs, and of course arresting the functions performed by them in the animal economy. These functions, it is almost unnecessary to state, are breathing and the circulation of the blood; and there can be no doubt that the death in this case was caused by some agency that had overpowered the nervous system, and thus stopped the processes just named, the due performance of which is essential to living existence. But what that agency was, the medical examination, and the chemical and microscopal researches by themselves, were insufficient to determine."

---

* In reference to this report, it is proper to state, that at the time when the remit was made to Dr. Macgregor and myself, the authorities, and, of course, we also, were not aware that anything else than aconite had been administered. This will explain why no allusion is made throughout the report to the belladonna.

The precognition in the case having been reported to the law officers of the Crown, the medical student was served with an indictment, charging him with culpable homicide. To this offence he pleaded guilty, at the spring circuit held at Glasgow in the beginning of last May; in consideration, however, that he had been on the most friendly footing with the deceased, and that he (the accused) had acted from no other motive, in giving the draught, than to confer a supposed favour, he was sentenced only to imprisonment for fourteen days.

Having thus given a detailed account of the principal facts connected with this very melancholy case, I shall now offer a few remarks on some of its more prominent points. In the first place, then, I think there are good reasons for believing that though a poisonous dose both of belladonna and of aconite had been administered, the fatal result was owing entirely to the influence of the aconite. At all events, with the exception of unsteadiness in walking, the symptoms manifested from first to last were exclusively those which we read of as having been present in cases of poisoning by that narcotic irritant, while, with the exception just stated, not one of the effects was displayed which are recorded as being characteristic of belladonna. The poisonous influence of belladonna is marked by flushing of the face, dilatation of the pupil, double vision, by the seeing of imaginary objects, difficulty of swallowing, loss of voice, a scarlet eruption on the skin, and extravagant delirium. Now, in the case under consideration, the power of swallowing was perfect, the face, so far from being flushed, was unusually pale, there was no mental aberration, and consciousness was retained till the last moment of existence. Further, vomiting was present from an early period, as it has been in all the cases I have read of where a poisonous dose of aconite had been taken, while in the great majority of cases of poisoning by belladonna, though nausea is not infrequent, vomiting very rarely ensues. In contrasting these effects, then, we are entitled, I think, to assume that aconite is a much more energetic poison than belladonna, that, in consequence of its greater intensity of action, it keeps the less powerful narcotic in abeyance, masking, if not altogether repressing its effects, and thus giving support to the popular belief, that two poisons cannot act at the same time in the animal economy.

In the second place, the quantity of the poison taken, being a matter of the greatest importance, demands the most attentive consideration. It has already been stated, that twenty-five minims were administered of a tincture prepared according to a given formula, and therefore, making the necessary deduction for those circumstances already mentioned, which undoubtedly favoured the action of the poison, it has been established by this case that twenty-five minims of a tincture of aconite, of an ascertained strength, may take away life within three hours after administration. This, I believe, is the smallest quantity yet known, or at least recorded, as having produced a fatal result. A much smaller dose, however, has been found to exercise a poisonous influence, from which the patient narrowly escaped with life. Thus, in the second volume of the *Lancet* for 1851, Dr. Topham of Wolverhampton narrates the particulars of a case in which fifteen minims, taken in mistake by a female, produced inability to walk, convulsions in the face, &c. but recovery ultimately took place under the use of stimulants in about twenty-four hours. The tincture which this woman took had been made by macerating "four ounces of aconite in a pound of spirit," and thus, assuming that the pound of spirit contained only twelve ounces,—a matter regarding which there is much perplexing uncertainty,—the quantity taken in this case, and from which the patient nearly died, was equal to a little less than ten minims of the tincture given on the occasion referred to in the foregoing narrative, which preparation, to avoid circumlocution, I shall, in the sequel of this paper, refer to as Pereira's tincture, because of its similarity to that prepared according to the formula of the lamented Dr. Pereira.

On the other hand, it is well known that ten minims of a tincture stronger than this—that prepared according to the formula of Dr. Fleming—have been given by that gentleman as often as three times daily.* No doubt in some instances, when even one such dose had been exhibited, very alarming effects were occasionally witnessed, such as the pulse falling in two hours from 70 to 44, becoming "weak and irregular," the patient at the same time being seized with vomiting, and, at the third hour from administration, experiencing "numbness and tingling," accompanied with "great powerlessness of the extremities, and a sense of weight pressing on the belly."† Further, according to M. Teissier, as reported in the *Revue Medicale* for 1849, from one to two drachms have been given in the course of a day, not only with safety, but with great benefit, in the treatment of rheumatism and other ailments! This statement is extracted, without note or comment, into the *British and Foreign Medico-Chirurgical Review* for July,

---

* An Inquiry into the Physiological and Medicinal Properties of the Aconitum Napellus, by Alexander Fleming, M.D., p. 146.

† Op. cit. p. 148.

1849, and re-quoted from it into *Braithwaite's Half-Yearly Retrospect* of the same year. Now, the tincture of aconite that was given in the case which has suggested these observations, being about twice and a-half stronger than that prepared in France according to the formula of the Parisian Codex, it follows, that the two drachms given by M. Teissier in the course of a day with such marvellous results, are equivalent to forty-eight minims of Pereira's tincture! On this statement I shall only remark, that there must surely have been great carelessness in the mode of preparing the tincture, or that some other botanical species of aconitum had been employed than the A. Napellus, (of which more in the sequel,) for it is scarcely conceivable that such a large quantity of properly prepared and carefully selected aconite could have been administered, even in divided doses, with impunity, much less with success. And while on this point I must be allowed to express my opinion, that it is much to be regretted that the two respectable British journals already named, should have admitted such an extract into their pages at all, and that having done so, it is still more to be regretted, that they did not see fit to append the censure of the editor of the *Revue Medicale*, who, after giving the substance of the memoir of M. Teissier—which first appeared in the *Gazette Medicale de Lyon*—concludes with the following significant remark:—"Ce memoire est intéressant: mais il lui manque, que son honorable auteur me permette de le dire, il lui manque la preuve, c'est a-dire la connaissance de la methode qui a été suivie dans l'experimentation de ce medicament et au moins quelques observations qui puissent servir de type et de guide dans son emploi."*

But the quantity of aconite prescribed by M. Teissier—large as it is—stands out in harmless contrast with the enormous doses which, as we learn from the journals and the works on toxicology, have occasionally been taken without inducing a fatal result. Thus, in the *Lancet*, for 1837, Mr. Sherwen tells us of a woman who swallowed by mistake "a mouthful" of tincture of aconite, but who eventually recovered. Professor Taylor, in his work on Poisons, relates a case where recovery also took place, though a quantity equal in strength to one drachm and four minims of Pereira's tincture had been swallowed at one dose; and in the same work we find a quotation from *Canstatt's Jahresbericht*, for 1844, to the effect, that a patient ultimately recovered in three days, after having taken no less than ten drachms of the tincture of aconite! The escape from death in these and similar instances, as contrasted with the fatal results which have ensued from much smaller quantities, has been attributed to variation in the strength of the tincture employed. The untoward events—both as regards the successful treatment of disease on the one hand, and the risk of producing poisonous effects on the other—which take place from want of uniformity in the various formulæ throughout the United Kingdom, for the preparation, not only of this tincture, but of many of our most valuable remedies, are certainly very much to be deplored; and it were well for society at large, it were creditable to the philanthropy of our honourable profession, if the medical men throughout the British empire, instead of busying themselves about the advocacy of local claims, and the perpetuation of corporate monopolies, would combine in an energetic and unanimous movement, for the establishment of a National Pharmacopœia, as the only plan for suppressing the evils of localized and ever-changing medication. And if any arguments were needed to enlist the whole profession as one man in favour of this reasonable project, they would be found in the fact, that in reference to this very tincture of aconite, and omitting all allusion to the preparation of foreign lands, there are in this country alone, no less than five different tinctures in daily and common use,—one adopted by the London College, another by the Dublin; the third prepared according to the formula of Pereira; the fourth from the recipe of Dr. Turnbull; and the last from that of Dr. Fleming. At the same time I cannot subscribe to the opinion, that mere weakness of tincture accounts for the absence of a fatal result in those cases where large doses of this drug have been swallowed; at all events, he must be credulous indeed who believes that such a circumstance will explain why death did not follow rapidly, almost instantaneously, after ten drachms, or anything approaching to ten drachms, of any fluid entitled to the name of tincture of aconite, had been introduced into the system. I suspect that if all the facts, connected with the administration of these large quantities, were known, it would be found, as occurred in a case related by Dr. Golding Bird, that vomiting succeeded almost immediately after the introduction of the poison into the stomach, and that owing in great part to this cause, and not to mere weakness of preparation, a fatal issue was prevented. Moreover, it ought to be remembered, that all the species of the genus aconitum are not equally poisonous, and it is by no means an unlikely circumstance, that in the instances of supposed miraculous recovery from large doses of aconite, the preparations employed had been made from some of the less active species, and not from the virulent Aconitum Napellus. On this point Dr. Christison makes the following important remarks:—"It has been rendered highly probable by the researches of Dr. Fleming, that the very peculiar acrimony of the monkshoods is a measure of their narcotic properties, and consequently of their medicinal virtues. I have found that *A. Napellus, Sinense, Tauricum, uncinatum,* and *ferox*, possess intense acrimony; that *A. Schleicheri* and *nasutum* possess it feebly; *A. neomontanum* very feebly; and that *A. paniculatum, lasiostomum, Vulparia, variegatum, nitidum, Pyrenäicum,* and *ochrolencum*, do not possess it at all. These facts will direct the medical botanist in the choice of a species for medicinal use."*

---

* Revue Medicale, 1849. Tome. i. p. 335.

The only remaining point connected with this case to which I am anxious in a single sentence to direct the attention of medical jurists in particular, is the employment of the microscope in toxicological investigations. Nearly two years ago, when engaged with my friend Dr. Macgregor in the chemical examination of a case of poisoning by opium, it was suggested by that gentleman, that the microscope might be made available, for confirming the discovery of the crystals of morphia, which, by the usual process, we had succeeded in separating from the meconic acid. The suggestion was adopted, and the result was, that the perfect similarity as to shape of the crystals obtained from the stomach under examination, with those of genuine morphia procured from an accredited source, left no doubt of the complete identification of the one set of crystals with the other. In the case of amorphous bodies, however, such as the alkaloid aconitina, it has been shown by the foregoing narrative, that such a satisfactory corroboration of other proofs cannot be obtained.

IX. *Report of Cases Treated in the Medical Wards of the Glasgow Royal Infirmary.* By WILLIAM WEIR, M.D., Physician to the Infirmary, Lecturer on Clinical Medicine, &c.

FOR the management and treatment of the medical cases in this Institution there are four physicians, all of whom visit the hospital daily. Two of these have the care of the fever cases, and the acute eruptive contagious diseases, while the other two receive the general medical patients. The two latter are appointed to deliver the clinical lectures upon the cases admitted into their wards, each having two wards for males and one for females, containing in all about 120 beds. These physicians have therefore always under their care from fifty to sixty patients each, during the whole winter session. To each of the physicians is appointed a resident clerk, whose duty it is to enter the history of the cases into the journals, write the daily reports, and otherwise attend to the patients when the physician is absent. The students have a right to visit the clinical wards along with the physician, to note the treatment of the cases, and attend the lectures, without any fee, in addition to that paid for general attendance upon the hospital.

The physicians to the Infirmary are frequently changed,—perhaps too frequently,—the appointment being for four years only; at the end of which there is a period of ineligibility of one year. By this system of rotation there is a certain and regular admission of new physicians, and the advantages, professional and otherwise, of being medical attendant to the Infirmary, is thus diffused over a large portion of the profession, all who have obtained the degree of M.D., and have been eight years in practice, being eligible for election. Whether or not this plan is the best that could be adopted, for the benefit of the patients, and the interests of the medical school and the profession at large, or whether it is superior to the plan of life appointments, adopted invariably in English hospitals, may admit of question. The present system, no doubt, has this advantage, that by it a very considerable number of the medical men of the city may become connected with the hospital; and it is not likely that any physician in his dotage will be found giving clinical lectures to the students, and having the sole management and treatment of the patients, which may possibly occur in those hospitals where the medical attendants are appointed for life. But, on the other hand, however eminent and qualified the physician may be,—with whatever zeal and diligence he may have acquitted himself,—and however well acquainted with hospital practice and duties, he cannot, according to the present laws, be re-elected until he passes his period of ineligibility and chooses to become again a candidate. He must retire at the end of the four years. The directors have no alternative, they must choose a new physician. Nevertheless, this system of frequent changes was long popular with the profession generally; but it is considered at the present time, by almost every one, that the period of appointment is too short, and that it would be for the welfare of the patients, and the advantage of the institution in every way, were the period extended from four to eight years, or even twelve. The propriety of some such change has been lately advocated by a few of our medical directors, and it is to be hoped that among the numerous duties connected with the institution, which necessarily take up their time and attention, this very important one, regarding the appointment of the medical staff, will not be overlooked.

---

* Christison's Dispensatory, p. 54.

The present report includes only a few of the most interesting cases treated in my wards from 1st November, 1852, till 1st February, 1853. About 150 in all were admitted during that period, and the deaths amounted to 23, being one in 6½. A very large proportion of the whole were cases of disease of the heart and lungs, affections extremely frequent among the lower classes, and many examples of which are always to be seen in the medical wards. Not a few of these were admitted in a dying state, particularly those labouring under cardiac diseases, and some of them were *in articulo mortis*, dying in a few hours after admission, thus increasing the mortality greatly. Of this class of cases —diseases of the chest—there were no fewer than 54, of which 16 proved fatal, viz. 19 of bronchitis with 2 deaths, 8 of diseased heart with 6 deaths, 18 of phthisis pulmonalis, 7 of which died, and 7 of pleuritis and pneumonia, of which 1 proved fatal. Besides these cases of disease of the heart and lungs, there were 23 of rheumatism, 12 of eruptive diseases, 11 of secondary syphilis, 6 of albuminuria, and 6 of hepatic dropsy. In addition to the 16 deaths mentioned, 2 occurred from hepatic dropsy, 1 from albuminuria, 1 from chorea, 1 from ileus, and 1 from meningitis following long-continued suppuration of the ear, thus making 23 fatal cases in all.

Very few of these were of an acute character on admission, the greater number being long-continued affections, although many of the deaths arose from acute attacks supervening on chronic diseases of long duration. The more acute primary affections are met with in greater number in the wards set apart for fever and eruptive diseases.

I. Cardiac Dropsy.

There were seven cases of this affection, six of which proved fatal. None of the fatal cases lived longer than a few days after admission, except one, and I relate the three following, chiefly for the sake of the morbid changes discovered on dissection. For the minute account of the post mortem appearances, I am indebted to Dr. Wm. Aitken, who has been lately appointed to take charge of all the inspections that are made in the hospital.

Ann Niven, aged 12, *admitted* 27*th Dec.* 1852.—About six years ago, after having sustained a fright, she was seized with palpitation and dyspnœa, which she states have continued ever since. She was treated in this hospital about two years ago, and after a short time was dismissed apparently well, with the exception of slight palpitation. In this state she remained till about three months since, when the palpitation became greatly aggravated, and was accompanied by pain in the cardiac region, soon after which the feet became anasarcous, and the abdomen also began to swell.

On admission, the countenance is much swollen and pallid, the dyspnœa is very great, the lips livid, and she complains of pain in the region of the heart. The feet, legs, and thighs are also much swollen, and pit upon pressure; the abdomen is greatly enlarged, dull on percussion in the lower part, and fluctuating; she has no pain in the region of the kidneys, but some tenderness in the right hypochondriac region. Pulse 120, small; tongue slightly furred; bowels open; urine scanty, and contains no albumen. Percussion of chest elicits a clear sound in its anterior and upper part, but is quite dull on both sides in its lower and posterior portions, when patient is in the recumbent position. Auscultation detects sibilant and mucous ronchi in various parts of the chest. Cardiac dulness is somewhat increased, and there is a distinct prominence of the thoracic parietes in that situation. The action of the heart is quick, the sounds indistinct, and the first sound is accompanied with a loud bruit, which can be heard over the whole of the cardiac region, but most distinctly towards the left side.

A blister was applied to the chest. She was ordered three drachms of *bitart. of potash* immediately, and small doses of *spt. ether nitros.* and *tk. opii camphorat.* frequently repeated. On the 29th, the symptoms were not relieved, and the urine continued very scanty. Saline diuretics, with half a grain each of *pulv. digital.* and *submur. hydrarg.* were ordered three times a-day.

31*st Dec.*—Dyspnœa continues very distressing, and other symptoms as formerly. Bowels loose; pulse 120. *Anodyne draught every night.*

She continued gradually getting worse, her chief complaint being the great difficulty of breathing, and during the last two days she had some hemoptysis. She died on 4th January.

Inspection.—Pleural cavities contained much fluid. The apex of the heart extended below the sixth costal cartilage. The pericardium contained an increased amount of fluid, and a white granular exudation covered the pericardial surface of the right auricle. Decolorized clots of fibrin of considerable firmness filled the cavities on the right side of the heart, along with fluid blood. The orifice of the right auriculo-ventricular valve was enlarged, and the cavities of the right side dilated. A gritty deposit surrounded the edge of the lappets of the valve. On the left side of the heart the auriculo-ventricular valves were found considerably hypertrophied, and the lappet applied against the septum was more particularly thick. The left side contained blood of a dark colour. Heart weighed 14½ ounces. Walls of left side were thickened. Both lungs condensed in several parts by effusions of blood. Peritoneal cavity contained fluid. Kidneys healthy.

Henry M'Inalty, aged 24, *labourer, admitted* 16*th Nov.* 1852.—Has been subject to dyspnœa since he was a child, but about five weeks ago, after exposure to cold and damp, the difficulty of breathing became much more severe. Shortly after, he observed his feet and legs increase in size, and the swelling proceeded gradually upwards, until it reached the abdomen.

On admission, legs and thighs are highly œdematous, and pit on pressure. The abdomen is also much enlarged, and distinctly fluctuating. Face and extremities are cold, and of a livid hue. Respiration very laborious. On percussion there is found much extension of cardiac dulness, and the inferior and posterior parts of left side also give a dull sound. Heart's impulse is weak; the first sound is stronger than natural, but the second is almost inaudible. There is no increase of hepatic dulness, and no pain in the renal region; pulse 96; tongue furred; bowels rather slow. *Anodyne draught at bed time.*

17*th.*—Pulse 104, small, easily compressed; urine scanty; dyspnœa continues very severe; has been of intemperate habits.

Three ounces whisky; repeat draught; castor oil in the morning; blister to chest.

18*th*.—No improvement; countenance very livid, and dyspnœa continues severe; pulse small and very rapid; died next morning.

Inspection.—The areolar binding textures of body infiltrated with fluid, and the surface of a dark purple hue. Much fluid in both pleural cavities, particularly the left, which was nearly full. Left lung much compressed; and right lung highly emphysematous; substance of both otherwise presented a healthy appearance. Pericardium contained about four ounces of fluid of a straw colour. Heart greatly enlarged, both ventricles being dilated, but without any hypertrophy of the parietes, its substance however being much congested. Auricles on both sides healthy. The right auriculo-ventricular opening was greatly dilated, being capable of admitting about three fingers, and the borders of the tricuspid valves were much thickened. The left auriculo-ventricular opening was also slightly larger than natural, but the mitral valves were quite normal. The pulmonary and aortic semi-lunar valves were also sound. Liver somewhat enlarged, but of healthy structure. Spleen soft, and of natural size. Kidneys highly congested, having a preternatural bright red appearance when cut, but their structure otherwise unchanged.

This man was very much exhausted and feeble on entering the hospital, and being of dissipated and intemperate habits, and subject to disease of the respiratory organs from infancy, there was no hope, from the first, of doing him any good. The diagnosis was, enlarged heart with diseased valves, and fluid in all the cavities. I anticipated, however, from the weakness of the heart's impulse, that the morbid changes would have been best marked on the left side. The large quantity of fluid in the pericardium is probably sufficient to explain this symptom.

John Short, aged 50, *admitted* 9*th Nov.* 1852.—Has enjoyed general good health until about two months ago, when, after exposure to cold, he was seized with a rigor, followed by some slight dyspnœa and feeling of lassitude. About a week after this attack he observed his feet begin to swell, but as the swelling disappeared in the recumbent posture, he paid no attention to it. Since that time it has gone on gradually increasing, extending upwards to the thighs and abdomen. On admission the legs and thighs are found highly œdematous, and pit on pressure. The abdomen is dull on percussion in the lower part, and tympanitic towards the upper surface; it is also distinctly fluctuating. He complains of pain when pressure is made in the right hypochondriac region, and the dulness in the region of the liver is increased, to the extent of about an inch and a-half. He also complains of much dyspnœa and a constant short cough, but with little expectoration. Pulse 96; tongue clean; bowels costive. Percussion of chest gives a clear sound, and sibilant and mucous râles are detected in most parts, chiefly however on the right side. Sounds of heart normal, and cardiac dulness not much increased. *Pulv. Jalap, Co. ʒi. statim.*

20*th Nov.*—Three stools from powder, otherwise as on admission. *Saline diuretic powders, with half a grain of calomel, three times a-day. Blister to chest.*

24*th.*—Urine has been very scanty since admission. Dyspnœa has rather increased. Cough also continues very severe. Blistered surface discharging. Bowels slow. *Salts and cream of tartar. Continue powders.*

25*th.*—Salts operated freely. Has been slightly incoherent all night, and still continues so. Is at present much oppressed. Breathing laborious and noisy. On left side of chest loud sonorous râles very distinct. Heart's sounds very obscure, and its action tumultuous. Pulse 90, small. Abdomen rather less swollen. Complains of pain in hepatic region. *Draught with ether. sulphur. and tinct. opii.*

29*th.*—Much delirium for some days, which has now abated, and other symptoms are rather improved. Anasarca somewhat diminished. Breathes more freely; pulse 90, regular; bowels slow. *Pulv. Jalap, Co. ℈ij, Pulv. Scammon. gr. iij, Submur. Hydr. gr. ij. Sumat statim. Contin. alia.*

Dec. 2*d.*—Is now sensible, and has much improved since last report. Breathes easier, and anasarca continues to diminish; pulse 68, irregular.

For some time he continued to improve, and was able to walk about the ward. The breathing became easy, his urine increased to 4 lbs. daily, the pulse was 80, soft, and the anasarca was greatly diminished. His mouth was slightly affected with the calomel. On the 10th December the powders were omitted, and he was ordered decoction of broom, and cream of tartar, with nitrate of potass.

This improvement, however, continued only for a short time. On 26th and 28th December, the report is—"Cardiac dulness greatly increased; seems much oppressed; anasarca has returned; pulse 112, small; urine scanty." On the 30th the expectoration was mixed with blood, he was worse in every respect; and, on 31st, the following is the report:—"Symptoms much increased, particularly the dyspnœa, which is loud and laborious, and occasionally stertorous. Bruit in cardiac region very distinct; pulse 120, small; urine very scanty; bowels regular. He was again ordered the diuretic powders with calomel, and four ounces of gin daily. He continued to get worse, rapidly sunk, and died on 3d January."

Inspection.—Fluid to the extent of about three pints filled the pleural cavities, and the left lung appeared more compressed than the right. Heart extended below sixth rib; dimensions otherwise much increased; weight 28½ ounces; valves healthy; right side much dilated; auriculo-ventricular orifice enlarged; walls of left side much thickened, and cavity dilated. Some increase of fluid in the pericardium. Blood effused into the substance of lungs at anterior part of base. Peritoneal cavity contained fluid. Liver extended by both lobes to about three inches below the costal cartilages. Its substance was condensed and granulated.

This case had more of an acute character than the other two. The disease was only of two months' duration when he was admitted, and it was ushered in by rigors, pyrexia, and other symptoms of an inflammatory attack. It had at first more the appearance of an hepatic than a cardiac affection; but, in the course of a few days, the irregular pulse, the increased extent of cardiac dulness, and the gradual advance of the anasarca, along with the very great difficulty of breathing—respiration being performed sometimes in an irregular and stertorous manner—pointed to the heart and lungs as the principal organs affected. The great improvement which took place, and continued for nearly three weeks, I attributed chiefly to the calomel.

These are all well-marked cases of cardiac affection, having many symptoms in common, referrible to the functions of respiration and circulation. They are examples of a class of diseases continually found in the medical wards. Scarcely a day, certainly not a week, passes, without one or more such cases being admitted.

II. Albuminuria.

Many cases of dropsy with albuminous urine are admitted into the medical wards. Most of these are in a chronic state, the disease having existed for months or years, presenting unequivocal symptoms of that affection of the kidneys, well described by Dr. Bright. Occasionally, however, we meet with an instance of general anasarca coming on suddenly, in a constitution previously healthy, and exhibiting the same state of the urine in regard to its chemical properties. Such have all the characters of an acute affection; they require strict anti-phlogistic treatment, which is generally successful, and the patients are dismissed cured in a short time. The chronic cases, after remaining under treatment for a few weeks, or a month or two, are usually dismissed "relieved;" and we have not, therefore, many opportunities of examining, post mortem, the state of the kidney in the more advanced and aggravated form of the affection. The two following cases are instances of this disease. The first presented the alteration of the kidneys, described by Dr. Bright as the second stage of the affection; and the other I consider a well-marked example of the acute albuminuria.

Christina Rose, aged 50, *married, of intemperate habits, admitted* 29*th November*, 1852.—About two years ago, after exposure to cold and damp, she was attacked with swelling of the lower extremities, for which she received treatment, and the swelling disappeared, and did not return until about five weeks ago, when, after much exposure to cold, she was seized with shivering and general uneasiness. Two days after this she observed her feet and ankles increase in size, and the swelling gradually extended up the legs and thighs to the abdomen. She has also all along been troubled with great dyspnœa, a short and constant cough, with muco-purulent and frothy expectoration. Percussion gives a clear sound over the whole chest, and loud mucous and sibilant râles are to be detected in various parts, mostly, however, in the anterior parts of chest. The cardiac dulness does not seem to be increased, and the heart's action, though laborious, is not accompanied by any abnormal sound. The abdomen and lower extremities are much enlarged, the former being distinctly fluctuating, and the latter pitting on pressure. She has no pain in the hepatic region, nor is the dulness in that region much increased; and there is no uneasiness in the renal region. Urine scanty, and of a deep red colour, having a specific gravity of 1·025, and highly albuminous. Pulse 80; tongue furred; appetite bad; bowels open.

This woman was greatly exhausted when she was admitted. Her complaints had been much neglected, and it was evident that no treatment could be of any avail. She was ordered anodynes and stimulants, and a blister was applied to the thorax, but the symptoms became gradually worse from the time of admission, and on 2d December, at the visit, she was *in articulo mortis.* She died next day.

Inspection.—The cellular substance over the whole body was infiltrated with fluid. Pleural cavities contained about two pounds of fluid, and the pericardium about four ounces. Lungs did not collapse to their usual extent. An increased amount of air distended the tubes and vesicles of the pulmonary substance. The bronchi were filled with a tenacious puriform mucus, and the membrane which lined them and the trachea was much increased in vascularity, and somewhat thickened. The heart was enlarged, and the parietes much thickened, while the cavities were somewhat diminished in capacity. This was more particularly observable in the left ventricle, which was much hypertrophied. The valves were in a healthy state, except the semi-lunar valves of the aorta, the corpora aurantii in each segment of the valve being greatly enlarged. The vessels on the exterior of the heart were also preternaturally enlarged. The cavity of the peritoneum was distended with fluid. The spleen was extremely small, measuring only about two inches in length, and scarcely one inch in breadth. It weighed about two ounces. The kidneys weighed together about eleven ounces, and were slightly increased in size. The cortical substance was converted into a granular texture by a copious morbid exudation of an opaque white substance, and on their external surface exhibited a mottled appearance underneath the investing tunic. The natural firmness of the texture was much diminished, and the tubular substance of the gland was slightly encroached upon, at the upper and lower end, by the morbid deposit. A microscopic examination showed the tubes distended to a greater or less extent with the epethelial secretion, in its nuclear state, more especially near the malpighian corpuscles, while the enveloping membrane of the corpuscles, or terminal extremities of the tubuli uriniferi, were collapsed round the coil of blood vessels, which were generally bloodless. Increased vascularity of the texture of the kidney existed in the tubular substance; and among the tubes of that substance, as well as in the cortical part, a great amount of the secretion of the tubes had undergone the fatty degeneration characteristic of this disease, and presented an irregular varicosed appearance.

Thomas Stobo, aged 27, *printer, admitted* 3*d November*, 1852. —About nine or ten days ago, after exposure to cold, was seized suddenly with a rigor, followed by pain of head, slight dyspnœa, and general pyrexia. These symptoms were succeeded in three days by swelling of lower extremities, which soon extended to abdomen and face. For this he appears to have been treated with mercury, for he complains much of the soreness of his mouth.

On admission, the lower extremities and face are somewhat swollen, and pit on pressure. The abdomen is also swollen, and slightly fluctuating. Has no pain in the renal or hepatic region, and liver appears to be of normal size. The dulness of cardiac region is not increased, and although heart's action is abrupt, there is no bruit accompanying the sounds. Urine is not much diminished in quantity, but is highly albuminous, having a specific gravity of 1·018. Still complains of slight dyspnœa, but percussion of chest is fair, and no abnormal sounds can be detected. Pulse 72; tongue coated with a yellowish fur; bowels open. *Half an ounce Epsom salts.*

4*th.*—Swelling greatly abated. One stool from salts. Pulse 84, firm. *To be bled from arm to eight ounces. Sinapism to chest.*

5*th.*—From some mistake has not been bled. Feels pretty comfortable. Still some anasarca. *Saline diuretic powders three times a-day. Tepid bath.*

6*th.*—Urine four pounds last twenty-four hours, of a deep colour, as if containing a small quantity of blood. Dyspnœa and other symptoms relieved. *Continue powders.*

9*th.*—Urine continues to increase in quantity, and is much paler in colour. Pulse 60, full, of good strength. Perspires occasionally. *To be bled to twelve ounces.*

12*th.*—Blood not the least buffy. Has improved since last report. Urine five pounds daily, and now of a pale straw colour. Pulse, 64, of good strength. *Continue powders.*

14*th.*—Urine examined, and found to contain no albumen. Is improving rapidly.

17*th.*—Swelling completely gone. Dismissed well.

III. PLEURO-PNEUMONIA.

William M'Quinion, aged 39, *labourer, admitted January* 10*th*, 1853.—States that he has been troubled with a cough and expectoration for the last ten years, which always became more severe in the winter time. He has also had diarrhœa for the last seven years, accompanied with pain of the abdomen, increased on pressure. The diarrhœa is at times more severe than at others, but he is never entirely free from it. About three months ago, after having received an injury on chest, and being more than usually exposed to cold, he was seized with severe pain in the lower part of the right side of chest. This pain was of an acute lancinating character, much increased on inspiration, and it soon extended over nearly the whole side. For this he received no treatment, and the pain gradually subsided, and became of a dull character, his cough at the same time being aggravated, and the expectoration becoming more copious. He continued in this state till about ten days ago, when he was seized with a violent rigor, followed by a dull deep-seated pain, chiefly at lower part of chest, but soon extending upwards, accompanied by pain of head, heat of skin, and other febrile symptoms. The sputa now became more of a brownish character, and he had loss of appetite, and great prostration of strength.

On admission patient is found rather emaciated, sunk, and feeble, being scarcely able to assist himself. Decubitus is either dorsal, or on the unaffected side. Respiration loud and frequent. Complains of pain of right side of chest, deep seated, and of a dull character; but a more acute pain is also felt on pressure being made in the intercostal spaces. There is dulness on percussion over the whole of the right side of the chest, more complete towards its lower part. A distinct friction sound can be heard in the lower and lateral part, near the lowest rib, and in this spot the respiratory murmur is indistinct; a little higher up, both anteriorly and posteriorly, small moist crepitation can be distinguished on a full inspiration. The vocal resonance is much increased over the whole side, and there is loud bronchial respiration in the upper part of lung. Percussion of left side is quite clear at upper part, and the respiration is puerile, accompanied with mucous râles. Expectoration muco-purulent, and of a brownish colour. Surface of body hot, but extremities rather cold. Pulse 130, very feeble. Bowels very loose.

This man was from the first not expected to recover. He was greatly prostrated, and sunk on admission; his pulse was very feeble, and he had diarrhœa. He was ordered four ounces of wine, and one grain of opium.

11*th*.—Has rallied a little. Pulse 120, rather stronger and fuller. Diarrhœa abated. Has still some pain in right side of chest. *Omit the wine. Blister to pained part. Two grains of calomel, and half a grain of opium morning and evening. Mucilage mixture.*

Next day the cough and dyspnœa were still very severe; the expectoration copious and rusty; pulse 128, soft, full; and respirations 32. The bowels were more regular. He was ordered an anti-spasmodic draught, to be repeated in the morning, but he rapidly sunk and died on the evening of the 12th.

Inspection.—Considerable emaciation of the body. The lungs were observed to fill up the cavity of the chest, and to be more fully distended on the right side than on the left. The pulmonary and costal pleura of the right side were firmly adherent, forming a membrane about one-eighth part of an inch in thickness throughout the whole surface of the lung. A hard deposit, cartilaginous or nearly osseous, similar in appearance to the deposits found in the cavities of joints, was seen enclosed in the substance of the thickened membrane, at the posterior and lower aspect of the lung. It measured two inches in length, and one in breadth. The substance of the lung was uniformly distended with a greyish exudation, composed chiefly of the compound granule-cell, and the mucous secretion of the air tubes. It presented a homogeneous solid mass throughout, impervious to air, and on section presented an appearance mottled with black irregular deposits on a grey ground. The black deposit consisted of carbon, and was seen to follow, in a great measure, the course of the blood vessels. This right lung weighed 88 ounces, and the specific gravity of the whole was 1·046, while that of the most dense portion was 1·051. On the left side there were also strong old pleuritic adhesions. The lung itself weighed 40 ounces, and was softened into a grumous fetid mass at the posterior and lower aspect. The upper half of this lung was alone serviceable in respiration.

The pericardium was more distended than usual, containing about three ounces of fluid. A white, or "milk spot," evidently of long standing, was observed on the anterior aspect of the right side of the heart, and a similar deposit was seen to follow the course of the veins ramifying on the surface of the heart

X. *Contributions to Midwifery Statistics and Practice.* By J. M. Pagan, M.D., Professor of Midwifery in the University of Glasgow, Fellow of the Faculty of Physicians and Surgeons, &c.

In publishing the results of the practice of the University Lying-in Hospital, from the time of my appointment to the chair of midwifery, up to November 1, 1852, permit me to state, that, though columns are kept in the Hospital journals for the age of the patient, the length of the labour, and the number of the birth, I place so little reliance on the accuracy of the statements made by the patients upon these points, that I have made but little use of these columns in the following paper. In reference to the second of these points, viz. the length of the labour, there cannot be a doubt, that the shorter a labour is, the safer is it both for mother and infant. This statement addresses itself so immediately to our common sense, that no statistics in corroboration could render the fact more certain, and no statistics that should seem to disprove it would be believed. But this is not the whole question. In those cases of labour which are difficult and tedious, but for the completion of which nature is still adequate, is it safer for the mother and infant to interfere by operative means or otherwise, than to leave the case to nature? To solve this question statistics are wholly inadequate, for the safety of the mother and infant will depend in a great measure upon the judgment and dexterity of the medical attendant. One thing is very certain, that great mischief may ensue from trusting too long to the natural powers, while unnecessary interference is equally injurious.

I would also remark, that the proportion of instrumental and operative cases, in the following report, is not to be held as the ratio in which operative interference is called for, in the practice of midwifery, under ordinary circumstances. Many cases come under our treatment, merely because they are attended with difficulty and danger. Most probably they have been under the care of midwives, or others unaccustomed to perform midwifery operations, and at last, when it appears that the case cannot terminate naturally, our assistance is required. With a single exception, all the operations in the following report were performed by myself:—

Of 8,587 women delivered by the students attending my lectures, 8,551 recovered, and 36 died, being one death in 238½. Among these there were 95 cases of twin births, and 1 triplet—consequently 8,684 children were born, 4,803 being males, and 3,881 females; 467 children were premature, and 502 still-born. The proportion of still-born to the whole number was thus 1 in 17. 8,410 children presented by the cranium, 6 by the face, 131 by the breech, 113 by the feet, 29 transversely, and 1 is noted as compound, where the umbilical cord, and the left hand and left foot, were in the vagina.* In 31 cases of cranial presentation, the face was expelled from under the arch of the pubis. Of these, 27 were mature children, and 4 were premature, 22 male, and 9 female, 26 were born alive, and 5 were still-born. 1 only of the premature children was born alive; of the 2 mature still-born, 1 was delivered by the forceps, and the other was expelled naturally; of the 6 face presentations, all were delivered without assistance; all the women recovered, and 1 infant was still-born.

Instrumental Cases.—97 cases of instrumental delivery are reported. The operation of craniotomy was performed in 15 cases, twice upon the same woman, who obstinately refused to permit the induction of premature labour in her second pregnancy. Two of these mothers died. Of these 15 cases of perforation 12 were *primi paræ;* 1, as already stated, where the operation was performed twice upon the same woman; 1 in which the head of the child was enormously distended with fluid; and 1, a sixth labour, where I failed to engage the head in the pelvis by the long forceps, and in which it was found that the sutures were firmly united by bony union, the posterior fontanelle completely, and the anterior fontanelle almost entirely obliterated. The head, and indeed the infant generally, was of a remarkably large size. The bones of the head were unusually thick.

---

* As connected with the presentation of the infant, those circumstances only are required to be recorded, which gentlemen engaged in acquiring knowledge of practical midwifery may be expected to ascertain with accuracy.

Forceps Cases.—Of the 82 forceps cases, 65 were first births, and 17 second or subsequent pregnancies. 63 of the children were born alive; and 19 were still-born, or died soon after birth, 14 of these being first, and 5 second or subsequent labours. In 59 of these cases the child was a male, and in the remaining 23 a female, the males being in proportion to the females nearly as $2\frac{3}{5}$ to 1. In the whole 82 forceps cases, there occurred 9 maternal deaths, being a mortality of 1 in 9 deliveries. 5 of these were first labours; 4 second and subsequent. Of the *primi paræ*, 1 suffered from *post partum* hæmorrhage, and died of puerperal fever; there are no remarks as to the cause of death in the remaining 4 cases. Of the 4 second and subsequent cases, 1 was a case of placenta prævia; in another there was both accidental and *post partum* hæmorrhage; in the third, a twin case, labour was complicated with convulsions; the patient died comatose four hours after delivery. The remaining case was also complicated with convulsions, which continued till death occurred, on the third day after delivery.

The number of still-born children in the forceps operations is not to be regarded as simply the consequence of the operation, or of the circumstances which led to the necessity for having recourse to it; as it is reported that several of the cases that proved fatal to the child, were attended with complications calculated to affect the life of the infant. In one case, for example, the cord was presenting along with the head; in another, the cord was prolapsed, and hæmorrhage existed; in a third, convulsions took place; and, in a fourth, the child was hydrocephalic. Of the 18 still-born, 13 were male, and 5 were female children.

I regret that I am not able to state the relative number of long and short forceps operations, an accurate distinction between these operations not having been kept in the registers of the hospital. I may state from memory, however, that a considerable number of the cases were long forceps operations, where the bulk of the head of the child was above the abdominal aperture of the pelvis, or where no part of the head had engaged in the brim. I regard the long forceps in cautious hands as a most valuable instrument, though in rash and unskilful ones it is no doubt a very formidable weapon.

Transverse Presentations.—Of the 29 cases of transverse presentations, 20 were turned. All the mothers recovered; but 15 children were still-born. The remainder of the transverse cases being premature, the children were expelled double by the natural powers. The infantile mortality in these cases is no doubt very great, but then it must be remembered, that the great majority of the women had been long in ineffectual labour, under the care of persons who were unable to detect the presentations, if they were not doing positive mischief by pulling down the shoulder, if the hand was within reach. In one case only have I seen, in hospital practice, a shoulder presentation, where the membranes were *unruptured.* In that case I succeeded, without difficulty, in bringing the head to the brim of the pelvis.*

Turning.—In performing the operation of turning by the inferior extremity, I have invariably (I do not remember a single exception) contented myself with hooking my fingers into the flexure of a knee joint, bringing down the foot, and making the child revolve by pulling down the leg, and pushing up the presenting part with the fingers of the other hand. In some cases of transverse presentations, when the woman has been long in labour, and the uterus firmly contracted round the body of the infant, it is useful to put a noose of tape round the ankle of the limb that has been brought into the vagina, and to make the infant turn by the hold thus obtained. It will be observed that no cases of turning in narrow pelvis have been recorded—a practice so strongly recommended by many of the most eminent continental accoucheurs, as well as by my friend Dr. Wilson of this city, and Professor Simpson of Edinburgh. My experience of this operation, as far as regards the life of the infant, is not favourable. I have delivered three women by turning, where the pelvis was contracted at the brim, and in which I had failed to bring down the head by the long forceps, but in all of these cases the children were still-born. One was a case of my friend Dr. Lochhead of Glasgow; and another of my friend Dr. Prichard of Partick; and the third case occurred in the practice of the Lying-in Hospital, since the foregoing figures were extracted from the journals. All the mothers recovered.

Placental Presentations.—Of placental presentations, 7 cases are reported. 4 mothers and 4 children were lost. In 3 cases the placenta was centrically implanted over the os uteri. The operation of turning was performed in two of these, and both mothers and children were lost. In the third case the placenta was expelled before the infant, the effect of which was to arrest the flow of blood in a very material degree. The mother recovered. The infant was still-born, but its death could not be attributed to the hæmorrhage alone, as it was *acephalous*. In one case of partial placental presentation, the forceps was had recourse to with success both to mother and infant—the remainder were left to nature; the cases being narrowly watched, while the usual means for restraining hæmorrhage were had recourse to.

---

* *Wendung auf den Kopf,* as it is termed by the German writers on midwifery.

Presentation of the Cord.—Six cases of prolapse of the umbilical cord are noticed in the journals. From my recollection of this complication, it is not impossible that several may have been neglected to be noted. All the mothers recovered, and 2 of the children were born alive. I know that in two instances* of this complication, recourse was had to the expedient so strongly recommended by Wigand, Ritgen, and many of the most eminent of the German accoucheurs, of arresting all circulation through the cord, by applying a ligature before the birth of the infant. In both these cases the child was born living. It is not my object in the present paper to enter into the value of particular expedients in the practice of midwifery, otherwise it would not be difficult to show that the recommendation is founded upon sound principles, and that, at all events, the result of the practice has been eminently successful.

Presentation with Face to Pubis.—In 31 cases of presentation of the superior of the long diameter of the child, the face was expelled under the arch of the pubis. Of these, 27 were mature births, and 4 were premature; 22 were male, and 9 female; 26 were born alive, and 5 still-born. Only 1 of the premature children—a 7 months' male—was born alive, the other 3 were still-born. The other 2 still-born children were mature; the one, a mature female, delivered naturally; the other, a mature male, extracted with the forceps.

Puerperal Convulsions.—Five cases of puerperal convulsions occurred; in 4 of these the labour was in the first stage; in 1 at the time the head was pressing at the outlet.† In all these the head presented. 3 mothers died, 2 recovered. In two of the cases the children were still-born. 1 of the cases of convulsions was a twin birth, the first child was delivered alive by the forceps, the second was still-born and putrid. In this case the patient was enormously distended by dropsy, and the cause no doubt arose from uræmia. In one case, where the convulsion fits were very numerous, and continued for many hours, delivery was effected by turning. This woman recovered, but the child was lost. It was a first labour, as, indeed, were all the cases reported, with the exception of the one just noticed, where extreme dropsical effusion existed.

---

* Once by my assistant, Dr. Nicholson, now of Antigua; and once by my late assistant, Mr. Kirkwood.

† I saw a case of convulsions some years ago with my friend Dr. Macgregor. It was a twin birth, in a *primi para*, and both children presented by the feet. They were both extracted alive. The mother recovered, though she continued unconscious for ten days after delivery.

Rupture of Uterus.—Rupture of the uterus took place in one case. The woman had been long in labour, and the rupture had taken place before the patient was seen by us. A dead infant was delivered by turning, and the cause was ascertained to be the presence of a large exostosis growing from the anterior walls of the pelvis. The mother died.

Inversion of Uterus.—One case of inversion of the uterus is reported. This accident arose, I have no doubt, from rash attempts to remove an adherent placenta. I saw the woman about fifty hours after the inversion had taken place; the uterus was very firmly contracted, and all efforts on my part were ineffectual in returning the uterus to its natural position. It was a first birth, and the woman was lost.

Complicated Cases.—I saw two cases, and others may have occurred, which were complicated with large tumours in the uterine walls. In one of these my assistance was requested, in consequence of the tumour, which occupied the outer wall of the uterus, being mistaken for a second child. The patient made a very good recovery, the tumour diminishing rapidly, until it entirely disappeared above the pubis. This woman was aware of her own peculiarity, as the same enormous growth had been present during former pregnancies, and had disappeared after delivery.

Hæmorrhage.—Two women were lost from accidental hæmorrhage, and one from hæmorrhage after delivery. One of the cases of accidental hæmorrhage was seen by myself. She was delivered by the long forceps. The placenta had been completely separated from the uterus, and the cause of the separation was personal violence, which she had received when near the full period of gestation.

Premature Cases.—Of 467 cases of premature delivery, nearly 1 in 6 presented by the pelvic extremity, and 1 in nearly 52 transversely. It is not to be supposed that such would have been the proportion of preternatural presentations if all of these 467 cases had gone to the full period of gestation. Indeed the statements already made in this paper furnish sufficient evidence of the contrary. Nothing is more certain than that the position of the infant in utero is not unfrequently changed during the course of pregnancy, and that, too, at advanced periods. Of this I have seen many examples, and the fact has been ascertained by auscultation, abdominal and vaginal examination, when the diagnosis as to the position of the infant at some period before labour came on, has been falsified by the presentation when labour actually took place. Not that the diagnosis at the moment was wrong, but that the position of the infant had been changed before labour took place. That any satisfactory explanation of this undoubted fact has hitherto been offered, I am far from admitting. This, however, is intended as a paper of facts, and not of reasoning upon them.

Infantile Mortality.—In reference to the results to the infant in presentation by the inferior of its long diameter, it appears that of 80 cases of mature presentations, 24 were still-born, being 1 in 3⅓. Of these 80 cases, 18 were first births, 7 of the children being still-born, or 1 in 2½, whereas of the remaining 62 second and subsequent births, 17 only were still-born, being in the proportion of 1 in 3⅝ nearly.

Footling Cases.—There were 65 cases of mature footling presentation, 22 of these were still-born, being 1 in 3. Of these 65 cases, 18 were first labours, 7 of the children were still-born, the proportion here being exactly the same as in the breech first labours, viz. 1 in 2½. Of the remaining 47 of second and subsequent births, 15 were still-born, or 1 in 3 nearly. Both in breech and footling presentations, the infantile mortality is greater in first than in subsequent labours. The number of first births in each variety is the same, and the mortality equal. The increased rate of mortality in first labours seems to have no reference to the sex of the infant, for in each of the sets of cases 4 of the 7 still-born were females. Indeed, in none of this class of cases is the alleged fatal effects of the sex of the infant observable.

Still-Born.—502 children are reported as still-born. My late assistant, Mr. Kirkwood, in sending me these returns from the journals of the hospital, (and to this gentleman I have to express my thanks for the labour and pains he has taken in procuring for me the foregoing and subsequent details,) has remarked upon the comments made by Dr. Strang upon the enormous number of children reported still-born in this city. Dr. Strang says it is probably as much from moral as from physical causes that this occurs. Mr. Kirkwood observes:—"With the probabilities of the case I have nothing to do. I never had the least ground for suspecting foul play in any of the many cases I saw. That some have been reported still-born who lived for a short time after birth, accords with my own knowledge. But it is of physical causes, of which Dr. Strang may have no knowledge, that I wish to speak to you. In all quarters of the city I have met with women calling themselves 'midwives,' and practising as such, but who never had any, even the least, preparatory training or instruction. These, in narrating to me their proceedings, have sometimes unwittingly not only exposed their own malpractices, but have also, I doubt not, at the same time revealed the misdoings of their class. Then there is another, and perhaps more numerous, class, equally anxious to be useful, but mercifully blessed with a less liberal share of impudence. They are not midwives, but women who have *seen a great deal*, and who have had large families themselves, and are desirous to assist their neighbours. These women, like the professed midwives, have great faith in, and use unhesitatingly, the midwife's 'tea,' often in first labours, and before the os uteri has begun to dilate." This drug, Mr. Kirkwood informs me, such women obtain without difficulty from the druggists of the city. I do not wonder that the number of still-born children should be very large in a community where such practices are common.

In two cases incisions of the soft parts required to be made, to admit of labour being accomplished. In one case, in consequence of contraction from cicatrization of the os uteri, the result of syphilitic ulceration. This woman had been long in active labour of her first child; the head of the child was thrust down nearly to the orifice of the vagina, the uterus, remarkably thinned, stretched over it, and the os not more dilated than to admit the point of the finger; nearly one-half of the circumference of the os feeling of almost cartilaginous consistence. Just as a pain had passed its acme, I turned the edge of a hernia knife to the centre of the cicatrix, and completely divided it. The os uteri speedily dilated, and the mother and infant both did well.*

In another case of stricture of the vagina, the consequence of gonorrhœal inflammation and submucous consolidation, I was obliged to make free incisions all round; even then the child's head was only withdrawn by the aid of the forceps, and the incisions made by the knife were no doubt enlarged by dragging the head through the narrowed vagina. Both mother and infant survived. The mother had incontinence of urine for some time afterwards, but this inconvenience was entirely removed in a short time.

Twin Births.—From a somewhat more extended series of cases of twin births than those contained in the hospital report, but including these, I find that out of 108 cases, in 46 both children presented naturally, in 8 cases both presented by the breech, in 2 cases both presented footling, and in 1 case both children presented transversely.

In this last case it is somewhat singular that both children were precisely in the same position in the uterus, both presenting with the left shoulder, the child's belly looking to the mother's belly. Both children were turned. The first was still-born.

When different presentations took place in twin births, the following is the order in which they occurred:—In 26 cases the first child presented with the head, and the second with the feet; in 15 the head and breech, in 6 the feet and head, in 1 the feet and shoulder, in 1 the feet and breech, in 1 the head and shoulder, and in 1 the breech and head. Of the sex of the 108 twin cases, 36 were both males, 26 both females, 46 male and female.

---

* Dr. Bennet, in his work upon inflammation of the uterus, states that contraction does not follow the healing up of portions of the os and cervix, destroyed by *potassa fusa.* This would be very fortunate for those unhappy creatures who are thus treated, if it were true. I can assure Dr. Bennet that in the statement he thus makes, he is in error.

In the single case of triplets that occurred, the first child presented naturally, the other two presented by the breech. The two first born were males, the last a female. The first was born alive. It is stated in the journals that this woman's mother, and her maternal grandmother, gave birth to triplets.

Placenta.—The condition of the after-birth of these 108 cases has been recorded in 24 cases only. In 16 of these cases it was single, and in 8 double. In the case of triplets there were two placentæ, one common to the two last born.

It will be observed that I have made no allusion to any peculiarities reported in reference to the third stage of labour. Not that such do not exist in our journals, but simply because they present themselves in far too great numbers; so that it is difficult to believe that adhesions of the placenta, and irregular contraction of the uterus, with retained placenta, were not rather the result of the inexperience of the student than pathological facts. It is quite certain that these peculiarities always diminish in number as the student becomes more experienced. The inexperienced student so frequently mistakes the discharge of blood, which accompanies the separation and removal of the placenta, for morbid hæmorrhage, and reports it as such, that I also abstain from noticing the references which exist in our journals to *post partum* hæmorrhage. I cannot call to mind more than three instances, in which I was applied to, to remove a really adherent placenta. No doubt we have had most experienced matrons and assistants, who were quite capable of performing this operation, and did so not unfrequently; but it would be impossible to discover from our records, whether this operation was always required when it was performed. I would rather furnish data which are imperfect than inaccurate. Some years ago I published an account of an hospital case, in which a portion of the placenta was developed within the Fallopian tube, and thence removed by the hand.

Maternal Mortality.—Permit me to remark, in conclusion, that the maternal mortality of the cases delivered within the hospital, amounts to 1 in 77, whereas the maternal mortality of those delivered in their own wretched dwellings is 1 in 325½ only. I apprehend that some such ratio of mortality between women delivered in lying-in hospitals and in their own houses, however wretched these may be, will be found to exist wherever the truth is told, and where accurate registers have been kept. It may be objected that the results of the cases delivered within the hospital are more certainly known, than of those delivered in their own homes. I admit the probability to a slight extent in our own practice, and to a slight extent only. Of one thing I am quite certain, that the result of every case where operative interference was had recourse to was ascertained, whether the woman was delivered within the hospital or not. Both the deaths after craniotomy occurred within the hospital. The maternal mortality within the hospital after delivery by the forceps was 1 in 7, whereas in those delivered in their own houses it was 1 in somewhat less than 10. These facts, which are only a corroboration of all previous experience, render lying-in hospitals, even the richest and best appointed, institutions of very questionable utility, if we are not justified in characterizing them by a more decided epithet.

XI. *Notice of the Dissection of a Case of Lateral Transposition of the Viscera of the Thorax and Abdomen in a Man.* By ALLEN THOMSON, M.D., F.R.S.S., London and Edinburgh, Professor of Anatomy in the University of Glasgow.

WITH A DRAWING.

IN the course of last winter, a case of nearly complete lateral transposition of the viscera of the thorax and abdomen was met with in the dissecting-room of the University, and as instances of this remarkable malformation are by no means common, the readers of this journal may be interested with an account of it.

The subject of this case was a man of about 48 years of age, above the middle size, and of rather a robust frame of body. He was by trade a marble cutter, and a native of England; but nothing more of his history was known, than that he had been subject to rheumatism in early life, and about eight years ago had suffered from an attack of pleurisy.

He was admitted into the hospital of the City Poor's-House on the 28th of January, and died on the 4th of February last, or seven days after his admission. The above information, and the following particulars as to his state during the time he was in the hospital, were furnished by Mr. Marshall, house surgeon to the hospital.

On admission, this man's face and lips were livid; there was considerable difficulty of breathing, and he expectorated large quantities of thick yellow mucus. The origin of the disease was not learned. The lungs appeared to be the principal seat of disease. Percussion of the chest gave a clear sound towards the upper and front part of the lungs, but on the left side, below and behind, there was considerable dulness of sound. The sounds of the heart as heard by the stethoscope, appeared to be nearly natural as regards their rhythm and intensity; but the stroke of the heart was felt on the right side of the sternum, and the sounds were heard more loudly on that than on the left side. The first sound was rather weaker than natural, and was best heard under the right nipple, where its beat was also felt most distinctly.

Although the altered position of the heart was detected, it was not before death ascertained to have arisen from malformation. The urgency of the symptoms, and the extent to which the disease had proceeded, probably precluded that minuter examination which might have been made at an earlier period. Some œdema of the extremities had begun, and the patient was supposed to have died from the combined effects of disease of the lungs and heart; while the displacement of the heart was attributed probably to empyema on the left side, where the dulness of sound, caused, as it appears, by the liver, was perceptible.

The dissection of the body had proceeded some way, and the thorax was opened, when I perceived the nature of the case, from the position of the heart towards the right side, and the arch of the aorta passing over the root of the left lung; and, on opening the abdomen, I found that the malformation extended to that cavity. A muco-purulent effusion into the pulmonary tissue and bronchial tubes, and some degree of enlargement of the heart, were the only morbid appearances, relating to structure which were observed; and in all other respects, with the exception of the transposition, there was no deviation from the natural condition of the viscera.

A lengthened detail of the dissection in this case is altogether unnecessary, and the accompanying drawing will indicate sufficiently clearly the general nature of the malformation. It might almost be described in the words of Isid. Geoff. St. Hilaire, as applied to the complete form of the transposition of the viscera, or, as he has termed it, *splanchnic inversion*—viz. that the non-symmetrical organs of the thorax and abdomen are placed precisely as they would be seen in an image of the natural ones reflected from a mirror. But in the case before us the inversion was not quite complete, the stomach, with some adjacent organs, having in part retained their position on the left side.

The heart pointed to the right side, and the arch of the aorta passed over the right side of the trachea and gullet, instead of the left. On opening the pericardium, the pulmonary ventricle and the systemic auricle were seen therefore to the left of the heart, with the vena cava superior on the left side descending into the latter cavity. The main pulmonary artery, rising from the pulmonary ventricle, wound round the right side of the aorta, to pass below its arch. Three principal arteries similar to the usual ones, arose from the arch of the aorta, the first one being the innominata, dividing into the left carotid and subclavian arteries, while the right carotid and right subclavian arteries arose separately, and in succession, from the arch of the aorta. The remains of the ductus arteriosus joined the hollow of the arch towards the right, and was connected with the right instead of the left branch of the pulmonary artery.

The left vena innominata was short and vertical, and the right one long, and passing obliquely across the arteries rising from the arch of the aorta.

The principal vena azygos was situated on the left of the bodies of the dorsal vertebræ, and joined the superior vena cava by passing over the root of the left lung instead of the right.

The pneumogastric nerve gave off its recurrent branch round the subclavian artery on the left side, and round the arch of the aorta, close below the remains of the ductus arteriosus on the right side.

The relative position of the descending aorta to the vena azygos and thoracic duct in the thorax, and to the vena cava inferior in the abdomen, was similarly modified; and the latter vessel passed from the abdomen into the systemic auricle of the heart, through an opening of the diaphragm situated between the middle and left divisions of its trefoil tendon.

The right lung was divided by the oblique fissure into two lobes, and was hollowed out at its inner and anterior lower portion, as the left usually is, for the accommodation of the heart. The left encroached, when inflated, beyond the middle of the sternum at its lower anterior margin, and was divided into three lobes by the oblique and transverse fissures.

On first opening the abdomen, the intestines were found only partially covered by the omentum, which was thrown up and to the left side.

The liver was placed in the left hypochondriac and epigastric regions, the large (right) lobe towards the left, the smaller towards the right, the gall bladder, and everything else similarly inverted.

The caput cœcum coli was situated in the left iliac fossa, from which, after ascending a little way into the left lumbar region, it passed in front obliquely across the abdomen, deeply into the right hypochondriac region. A considerable part, therefore, of what might have formed the transverse part of the colon, was sunk in the right hypochondrium, which, as will be seen, was not otherwise occupied; the descending colon was on the right side; the sigmoid flexure was attached in the right iliac fossa and joined the rectum over the right brim of the pelvis.

The greater part of the small intestines, from near the upper part of the jejunum downwards, occupied the middle and right side of the abdomen, and the mesentery and great mesenteric artery and vein, presented the same transposition. But the stomach, spleen, pancreas, duodenum, and a small part of the jejunum, though not altogether naturally disposed, had not undergone a change of place similar, or to the same extent, with that of the other parts already described.

The stomach, of a somewhat elongated form, was placed chiefly in the left hypochondriac region, below the larger part of the liver and gall bladder; but as the gullet passed through its usual place, near the middle of the back part of the diaphragm, the cardiac portion of the stomach was much drawn up, first below and next behind the smaller part of the liver, while the body of the organ lay lower down than the liver, in the left hypochondriac and lumbar regions, and the pyloric portion stretched from this forward, and downwards towards the middle of the abdomen. Here, or a little to the left of the middle line, it joined the duodenum, which was raised from its usual deep situation, but otherwise nearly in its natural place, being directed towards the right, then curving downwards, and lastly, joining a portion of intestine which crossed the middle line towards the left, and making a sudden turn back to the right, passed behind the mesenteric vessels to terminate in the part of intestine corresponding to the commencement of the jejunum on the right side. This portion, directed towards the left, could not be regarded as the duodenum transposed; for it was not attached to the pancreas, and was rather to be looked upon as a portion of the jejunum drawn out of its place. On the part of intestine which has just been described, as intervening between the duodenum and the transposed jejunum, and which might be considered as a part of the latter drawn out of its usual relations, a small diverticulum existed, about an inch and a half in length and width, and of a rounded sacculated shape. It is worthy of remark, that this diverticulum was precisely in the situation in which we might expect it to be found, supposing it to arise in connexion with the remains of the ductus vitello-intestinalis of earlier fœtal life, and was held forward to the abdominal parietes by peritoneal adhesions.

The spleen was attached as usual to the great curvature of the stomach, and placed along with it lower than it usually is under the liver in the left hypochondrium. The pancreas was placed as usual with its larger end in the hollow of the duodenal curve, and extended thence towards the spleen, its position departing only slightly from that of the natural organ, in consequence of the deviation of the duodenum.

The kidneys were naturally placed, excepting that the left was somewhat the lower of the two.

I regret that the existence of complicated adhesions between the abdominal and visceral peritoneum in the vicinity of the duodenum, which matted together several of these parts, prevented me from ascertaining with precision the state of the foramen of Winslow, and of the lesser cavity of the peritoneum, together with the attachments of the great omentum, as I thought that considerable interest might have attached to the examination of these parts, had they not been so obscured, more especially in connexion with the modification in this case of that process of folding by which the colon, originally straight and nearly symmetrical, is laid up and across the abdomen, so as to form the transverse portion, and carry the cœcum into the right iliac fossa.

This, then, is an example of that kind of malformation in which, apart from the accidental disease which caused death, all the organs are of healthy fabric, of the usual size, fully developed, of natural structure and consistence, with nothing deficient nor redundant, but have merely undergone such a change of place in some, and of form in relation to position in others, that those parts of organs or entire organs, which are usually on one side of the body, have been transposed to the opposite side.

This is apparently not a very uncommon affection, and it is subject to some varieties of degree. In some, and apparently the greater number of cases, the transposition affects all the viscera; in others, only one or more of them. The heart especially, and the liver, appear to be those most constantly transposed.

This state of the viscera does not appear to exert any hurtful influence on the functions. Its existence has been detected in persons at various ages during life, and with the exception of the beat of the heart being felt on the right side, (by which indeed the condition has generally been recognized,) no unpleasant or unnatural symptom of any kind has been observed.

Isidore Geoff. St. Hilaire mentions his having seen living instances; and I remember my father, Dr. John Thomson, detecting this state of the heart in a medical student attending his lectures, and who suffered no inconvenience whatever from it. It was not indeed to be expected that there should be any, seeing that all the accompanying or connected viscera are similarly affected, and that the harmony and simultaneous actions of all of them are preserved.

It might be desirable to know whether any change was perceptible in these individuals in the more regular or symmetrical organs; for example, whether they are left handed. But I am not aware that observations on this point have been made.

The majority of the cases that have been described have been in adult men, but it has been observed also in women, and in children, and in one of the latter it was detected during life.*

The earliest observation of transposition of the viscera recorded is that by Riolan, in 1652, in the history of the dissection of a robber who had been broken on the wheel, but in whom nothing of the malformation had been detected during life. The first case which was ascertained during life, was that of a pensioned soldier of seventy-two years of age, observed and described by Morand, and reported on by Méry, in the *Memoirs of the Academy of Paris*, for 1666. The case seems to have attracted a great deal of notice at the time, and is supposed to have suggested to Molière the transposition of the heart and liver, which he puts into the mouth of Sganarelle in his play of *Mèdecin Malgré lui*, which was first published about the same time.

This condition appears to belong to that class of malformations which admit of some explanation from the observation of development, as it seems to proceed from a derangement or deviation from the natural progress of that process at a very early period. It is a general fact, that the commencement of all the most important malformations dates from a very early period of development. The degree to which the various kinds of malformations may be so elucidated is very different. In regard to some, great advance has already been made by a careful comparison of their abnormal structure, with the rudimentary and imperfect conditions of the parts in the earlier stages of their growth, and we may hope that, as our acquaintance with the phenomena of embryological development proceeds, and more accurate dissections of the malformations themselves shall be made, still greater light will be thrown upon their origin.

---

* Isid. Geoff. St. Hilaire, Hist. des Anomalics, &c. Paris, 1832; vol. 2.

The origin of malformations by defect has more particularly been very fully explained by embryological investigations, which have shown that the greater number of these malformations may be looked upon as arrests, checks, or modifications of some parts of the changes of the natural process of development. A second class of malformations, exhibiting considerable variety of forms, are to be attributed to morbid processes, diseased growths, unnatural adhesions, constrictions by foreign substances, &c. occurring also in the earliest stages of fœtal life, and giving rise to very various defects, both of the internal and external parts of the body, and may depend either on the original defect of the germ, or on foreign and accidental causes acting in the course of fœtal development. A third class of malformations, those, viz. of redundancy of parts, and the various degrees of double monstrosity, admit of explanation only on the supposition of an original abnormal condition or tendency of the germ, and have received only collateral elucidation from embryological observations, in so far as these have pointed out the general phenomena of the formative process by which the combined organs, or the pairs of organs, of a double fœtus are developed in unison, or in various degrees of fusion; and it has been ascertained that these phenomena do not deviate essentially from those of the natural process, excepting in the circumstance of duplicity. A fourth class of malformations, to which the one at present under consideration belongs, viz. those of unnatural position *(situs mutatus)*, admit of being divided into two sections; in one of which, single organs, or pairs of symmetrical organs, are entirely displaced from their natural situation. In some of these, the unnatural position is more or less that in which the organ is originally formed in the fœtus, as in the case of the genital organs, and these malformations, therefore, are, like many of those in the first mentioned class, to be attributed to defect or arrest of development. In others, of the nature of hernia, the causes of displacement may be very various and less regular. But the very peculiar malformation of which the case now described is an example, is of a different kind, affecting non-symmetrical organs, and probably arising from, or connected with, some derangement in the position of the whole embryo at the period when the relations of organs are more immediately fixed by the course of their formation.

It would appear, therefore, that this kind of malformation, which is scarcely described with sufficient precision for some of the parts by the words change of position, lateral inversion, or transposition, as it consists in the exchange of sides by the parts of some, as well as of the whole of others of the laterally non-symmetrical viscera of the chest and abdomen, admits also of a certain amount of elucidation from the consideration of embryological development, as was first suggested by the most acute and enlightened of embryologists, Prof. Von Baer of Konigsberg.

It is generally well known that in the earliest stage of development of all vertebrate animals, the rudiments of the embryo, which then consist chiefly of the cranio-vertebral axis, are placed on the upper surface of the membranes of the yolk, in connexion with which they are formed, in such a manner that the part which is afterwards to be the front of the body is placed symmetrically prone, or looking downwards on the yolk. The first change which occurs from this prone position, at the time when the head and upper part of the body are isolated or notched off from the formative layers of the yolk, consists in a twist or rotation between these upper parts (that is, the head and thorax,) and the abdominal and caudal portions, which still lie prone on the surface of the yolk. This twist goes on along with other changes, unnecessary to be specified here, till it has reached the extent of a quarter of a circle, and at a somewhat later period, when the abdomen and umbilical passages are closed in, is followed by a turn of these parts also on the yolk; so that the embryo comes to lie with its left side applied to the surface of the yolk, and the first umbilical passage, (ductus vitello-intestinalis and vessels, not yet forming a true umbilical cord,) passes from the left side of the body of the embryo to the surface of the yolk.

"This movement of rotation to the left, which the embryo performs," says V. Baer in the first part of his *History of Development*, in describing the changes occurring on the third day of incubation in the common fowl's egg, "is a very important moment in the history of the development of the fœtus; for with this movement are intimately connected many changes, and more particularly the metamorphosis of the heart. The left side of the embryo already presents, from this time of development of the sanguiferous apparatus, a physiological difference from the right side, for it is in relation to the latter the side of reception." The ascending and descending veins are at first placed on the left side exclusively, or if there are two, the left is the largest. The open part of the alimentary canal, by which it communicates with the cavity of the yolk, is placed more to the left; and when the rotation is complete, the left side of the embryo is towards the surface of the yolk.

V. Baer points out that in all animals in which the germinal membrane does not surround the yolk from the first, but extends gradually over it, the same sort of isolation of the fœtus from the yolk takes place, and the same relative situation is observed in the earlier periods between the embryo and the yolk; at all events, in the sauria, ophidia, birds, and mammalia, the embryo is always, in the second stage of its development, placed with its left side towards the yolk. In several hundreds of embryo-chicks, V. Baer has only observed two in a different position, or with the right side towards the vitellus. In one of these the turn was incomplete, and the heart was natural; but in the other, in which the rotation was complete, the position of the heart was inverted, so that the part usually towards the left was turned towards the right, &c. "I cannot doubt, therefore," says Von Baer, "that in this case there was a commencement of transposition *(situs inversus)*." "I have," continues this author, "more frequently found the umbilical vesicle situated to the right of the embryo in mammalia, particularly in the pig, which may depend upon the less firm support which the membranes of the ovum receive from the external coverings in viviparous than in oviparous animals."

A considerable number of years ago, when investigating the phenomena of development of the bird on an extensive scale, I observed only once out of many hundred incubated eggs of the common fowl, the embryo on the third day lying on its right side. I did not in that case attend to the state of the heart. But in a goose's egg of a corresponding period of advancement, I also once saw the same deviation from the natural position most distinctly, and in this case the position and form of the heart and vessels connected with it, were quite inverted; but the other viscera were not sufficiently advanced to enable me to observe whether the inversion had extended to them.

I have elsewhere * called attention to the fact, that in the case of double monstrosity, while the one of the united individuals that is situated to the right of a person looking at them in front is naturally formed, in the other the heart and non-symmetrical viscera are laterally transposed, as in the case of the man under consideration. The viscera in the two individuals of a double monster together therefore form a symmetrical whole; and I have adduced this fact, in confirmation of the suggestion of Von Baer as to the connexion between the malformation of transposition, and the original position of the embryoes on the surface of the yolk; because I have shown that in the original formation of double monsters, the two germs lie adjacent to one another, in the germinal area of the single yolk: both are at first prone, but if the germs are sufficiently apart to lead to the formation of two cranio-vertebral axes, with two visceral cavities, while the one individual (viz. that to the left of the person viewing them from above as they lie on the surface of the yolk) rotates so as to have the left side applied to the yolk, the other embryo makes an opposite turn, so as to have the right side downwards or next the yolk. Looking at these embryoes from below, or in front, or from the yolk side, the one to our right is that which is natural, that to our left is the one affected with transposition of the viscera. Taking the middle line therefore of the two, the apex of the heart is directed outwards from this line in both, the arch of the aorta, the stomach and spleen, are to the outside, and the liver, duodenum, and caput cœcum coli to the inside. But it must not be forgotten that, in the earlier stages, and through a considerable part of fœtal life, the difference between the one side and the other (as for example in the liver) is not so great as it becomes after birth.

---

* Paper on Double Monsters in the London and Edinburgh Monthly Journal. 1844. See also Serres' Recherches d'Anat. Transcend. and Isid. Geoff. St. Hilaire Hist. des Anomalies. 1832.

Bischoff in his admirable article on the Application of the History of Development to Malformations, &c. in *R. Wagner's Handworterbuch der Physiologie*, has called attention to the fact, that while the umbilical vesicle or yolk is placed, as I have stated above, to the left of the embryo, the allantois passes usually to its right side. But the development of the latter membrane takes place principally at a later period than that at which the position of organs in the course of formation is determined; for the umbilical cord is by that time contracting into a longer and narrower communication between the embryo and membranes of the ovum.

At that earlier period, corresponding to the second day of incubation in the common fowl, and the third week probably in the development of the human embryo, when the formative processes are most active, and the structure and relations of the most important viscera are determined by the condition in which their foundations are laid, the position in which the embryo lies, in relation to the yolk, may unquestionably, as Von Baer has suggested, determine the position and relations of the heart and great vessels connected with it, and very probably also that of the alimentary canal, liver, and accompanying viscera. But perhaps it may be premature, in the present state of our knowledge, to place together the malposition of the embryo as regards the yolk, and the lateral inversion of the viscera, in the relation of necessary cause and effect, for it is quite possible that some other unknown antecedent affection of the germ may determine them both.

Future investigations into the history of development, which have already done so much to elucidate the origin of certain kinds of malformation, may hereafter make us more fully acquainted with the circumstances which determine, or the general laws which regulate, the lateral deviations from natural position. Meanwhile, the examination of the position and structure of the embryo in its earliest phases of growth, as related to these and other malformations, cannot be too earnestly recommended to all those who make embryology a special subject of attention.

There are no facts on record to enable us to decide, whether the transposition of the viscera is, like many other malformations, hereditary. But even without this being determined, it is right to state that in attributing the origin of certain malformations to some original peculiar constitution of the germ, and of others to changes or injuries which are ascertained to occur in the progress of development, to the latter of which divisions the malformation of transposition appears most probably to belong, it is by no means intended to be denied, that there may in these cases also be a nisus or predisposition belonging to the germ originally, and derived by it possibly like other qualities from hereditary transmission.

In offering such explanations of the origin of malformations, I do not profess entirely to discover their cause, but rather attempt to point out that part of the process of development with which they are most intimately and constantly connected. In the case before us it has been shown, that the partial or entire transposition of the non-symmetrical viscera, is most immediately related to the change of position which occurs at the earliest period of formation of the heart and its main blood vessels, the liver in connexion with one of those blood vessels, and the alimentary canal.*

NOTE.—The drawing represents the transposition of the heart and great blood vessels—the liver on the left side, and the pyloric end of the stomach appearing beneath it. The caput cœcum coli, with the vermiform appendix, is seen in the left iliac fossa. 1. Right auricle of the heart; 2. Superior vena cava; 3. Inferior vena cava; 4. Vena azygos; 5. Right ventricle of the heart; 6. Pulmonary artery; 7. Left ventricle of the heart; 8. Aorta, (*a*) arteria innom. left side, (*b*) arteria carot. right side, (*c*) arteria subclav. right side, (*d*) ductus arteriosus; 9. Ensiform cartilage and cartilages of ribs; 10. Liver, (*e*) gall bladder; 11. Stomach; 12. Caput cœcum coli and ascending colon, (*f*) appendix vermifornis; 13. Small intestines; 14. Dotted line showing the position of the pylorus and duodenum, behind the colon; 15. The lungs indicated by dotted lines—two-lobed on the right, three-lobed on the left.

---

* On the back of the proof we find that the printer's devil has scrawled the following lines, which are rather too good to be lost.—ED.

Once nature a change in man's fabric to try,
His stomach and vitals set entirely awry;
To the left of his belly the liver was found,
And his heart to the right—but all otherwise sound.
Such hodge-podge of structure would hinder, you'd think,
The due courses of blood, of meat, and of drink:
But, strange to relate, they most fitly proceeded
Exactly the way that for health was most needed.
It has often been said of the just and the kind,
That their heart in the right place you're quite sure to find.
And as to our case, I should like to be told,
If this great moral law was still likely to hold.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

I. *The Sophistry of Empiricism.* London: John Churchill, 1853, pp. 84.

Homœopathy: its Tenets and Tendencies, Theoretical, Theological, and Therapeutical. By JAMES Y. SIMPSON, M.D., F.R.S.E. Edin.: Sutherland & Knox, 1853, pp. 292.

IN noticing the above publications, we are performing a duty at once necessary and disagreeable;—necessary, because it is manifest that imposition and delusion are riding rampant in this enlightened age; and disagreeable, from the same necessity which has given rise to their appearance. We do not for a moment suppose that either argumentation or ridicule will ever put a stop to the folly, or that opposing a bold front to it will do more good in arresting its progress, than would be done by uniformly treating it with silent contempt. And, in our opinion, to attempt to make either false systems or pure quackery the subject of legislation, would be but to foster a new race of deluders; for the public are very jealous of their privilege as free thinkers, and vast numbers would rather freely choose a probable evil, than be forced to submit to an evident good. Still, when the supporters of false systems publish books for the propagation of their views, and when these are eagerly read, it becomes desirable to give those who remain amenable to reason, an opportunity of seeing the snare into which they are about to be drawn. This is a work of no small nicety; first, because of the tendency of the minds of many to believe and hold fast whatever is mysterious or out of the common; and second, because of the difficult and ungracious task of satisfactorily proving to any one, that he is labouring under a mistake or delusion, even if that can be done with logical precision. The empiric represents his scheme as a new discovery, and leaves its success to the decision of a *discerning* public, while on the regular practitioner is thrown the onus of convincing the said public of its own gullibility, in being blinded by the pretences of the first.

At the head of this article are placed two works lately published with this view. The first, which, though appearing anonymously, we believe to be from the pen of Dr. Davidson, formerly physician in the Glasgow Royal Infirmary, contains an admirable exposure of the most concentrated kinds of quackery in vogue at the present day, while in the second Dr. J. Y. Simpson opens up a whole *broadside* against that most insinuating and most dangerous form of medical heresy, which seems to be peculiarly obnoxious to Edinburgh, and has even lifted its head in high places, vaunting its sanction and practice by the occupant of a professorial chair.

In exposing the various false systems under consideration, it is necessary to point out some of the fallacies in reasoning into which non-professional persons are liable to fall, especially with regard to a subject involved in so much obscurity as diseases and their cure. If there was but one right way of treating each disease, if every ailment had one appropriate remedy, the treatment would be simple enough, and the days of empiricism would soon have an end. But such is not the case; we treat disease according to certain principles, but make use of a great variety of means, according to the circumstances of each case. But the unlearned are unable to trace any connexion between these plans, and knowing that various means are successful in abating the same disorder, they are apt to conclude that any remedy *might* have the same effect. In most cases, it is difficult to recognize the relation of cause and effect in the cure of disease, so that by arranging a series of *fortunate* results which *may* follow any kind of treatment, or even no treatment at all, a particular system or medicine may be made to assume the appearance of great success. In the first pamphlet the matter is thus stated:—

> "Indeed, by the ordinary and habitual reasoning of mankind, a fortunate run of events has often secured to an empiric or empirical practitioner, a much higher reputation for ability than his competitor, who treated diseases with much more skill and caution. Prudence and ability have little chance in this arena, where good luck, chicanery and bravado, are arrayed against them, provided the *results* are the only *criteria* of judgment. The public should therefore be enlightened as to the state of the case." P. 7.

The usual course and probable terminations of diseases are detailed. Some are spontaneously curable. Some have a regular course, which they run in spite of any treatment. Others are more capricious, and continue for a variable and uncertain time, and then either rapidly disappear or gradually wear away. Again, some have no tendency to exhaust themselves; and lastly, some are incurable. Since, then, many diseases are spontaneously curable in a longer or shorter time, it is a matter of considerable difficulty to trace the cure to its proper cause, and advantage is frequently taken of this uncertainty to place some nostrum in a false position.

The author makes some excellent observations on the claims of scientific medicine, and the amount of control over disease which the physician claims for his art. First showing that even in fatal diseases it can be of benefit, he adds:—

> "But medicine, besides its ascertained power in assisting nature in intractable and even incurable diseases, and in soothing the pains and assuaging the griefs of those who are on their passage to the grave, is entitled to assert its almost certain control, in a given time, over a class of maladies which, without its aid, might be greatly protracted, or possibly fatal." Pp. 9, 10.

In illustration of this position there follows a long list of diseases amenable to medical treatment, which, however correct, is rather an incubus to the book, as it savours more of a defence of legitimate medicine than an exposure of "the sophistry of empiricism."

In trying to account for the prevalence of empiricism, we are not to look about for causes which can apply only to the present age, for at all times the treatment of disease has been attended with a certain amount of obscurity, which has often been taken advantage of by the designing to dupe their victims. The author traces the spread of empiricism to three causes. First, the tendency to confound the curative operations of nature with those of art; second, the effect of the imagination; and third, wilful fraud and imposition.

The first of these causes depends on the tendency to use the *post hoc, ergo propter hoc*, system of argumentation, and has been sufficiently illustrated in the preceding remarks, from which it will appear that a cunning arrangement of *fortunate* cases may give an appearance of success to any system, however absurd, if the favourable result is always regarded as directly caused by the remedy given before it.

The second hardly needs mention. The wonderful influence of imagination in the cure of disease is well known. A motion of the hand, or a glance of the eye, will throw a weak and credulous person into a fit; and a pill made of bread, if taken with sufficient faith, will (sometimes) operate a better cure than all the drugs in the pharmacopœia. The Prince of Orange, at the siege of Breda, in 1625, cured all his soldiers, who were dying of scurvy, by a philanthropic piece of quackery, which he played upon them with the knowledge of the physicians, when all other means had failed. Many hundreds of instances of a similar kind might be related, especially from the history of witchcraft. The mummeries, strange gesticulations, and barbarous jargon of witches and sorcerers, brought on all those symptoms of hysteria and other similar diseases, so well understood now, but which were then supposed to be the work of the devil, not only by the victims and the public in general, but by the operators themselves.*

So our author:—

> "In the present age much of the legendary belief on general subjects has been exploded by the pure light of science, and by a reformed Christianity; but there still lingers amongst almost all classes a kind of superstitious hankering after mysteries and occult operations in the cure of disease. The exhibition of a few tiny powders, some infinitesimal globules, one or two farinaceous pills, the radiation of mesmeric flashes, the wet sheet with its ingenious and fantastic modifications, the jugglery exercised in the manipulation of sacred bones and coffins, the prayers and orations of some transcendent saint or priest, the talisman of an excited devotee, or the nostrum of the thorough-paced empiric or mountebank, have all their manifold attractions and enthusiastic believers. Each and all of these have, no doubt, an operation on the system for good or evil; but the result, in most of these, is very problematical, and can be predicated by no law derived either from nature or experience." P. 14.

---

* Dr. Mackay on Popular Delusions.

That the existence of empiricism depends in great part on wilful fraud and imposition, no one can doubt.

> "But there is, moreover, another class, where mysticism is combined with trickery falsehood, and imposition of multifarious shapes, where the performance of impossibilities is asserted with unblushing effrontery, and where every disease that flesh is heir to must yield in pliant submission to some so-called universal agent. It is said that a drowning man will catch at a straw for support; we need not wonder, therefore, that a feeble, forlorn, and moribund man should grasp at a nostrum equally unsubstantial and fallacious." P. 15.

The author traces the success of this last class to the ease with which they can impose on some people, and to the impudent boasting with which they blazon forth their success. But in enumerating the causes which favour the spread of empiricism, he has omitted one which demands the serious consideration of the profession. We allude to the practice too common among our brethren of parading their names before the public, particularly in connexion with some specialty in treatment, whether that has been proposed or merely adopted by them. Within moderate bounds, and as long as they apply their specialty to its legitimate use, the publication of successful cases, even in a popular manner, as the custom often is, cannot be found fault with; but when they detail consultations, in which they appear to be always in the right, or the results of cases given up by other practitioners, and fleeing in despair to them as their only hope, from which they seem to act like so many good Samaritans, the abuse is evident, and it affords too ready an extenuation of the conduct of those advertising impostors, whose nauseous effusions begrim the pages of even our religious publications.* When any specialty is overtasked, as it is too apt to be, when it is boldly asserted that all means previously adopted were inadequate to the end in view, if not even mischievous, the public are placed in an awkward dilemma, for they are unable to distinguish between the too confident assertions, and possibly wilful exaggerations, of the misguided though educated medical man, and the mendacious flusterings of the low-bred charlatan; in truth there is but a narrow step between them.

The very fact that a regular practitioner may now and then be found to adopt the practice of continually publishing forth his name and acquirements, and by that means succeed in becoming extensively known, is of itself a temptation to ignorant empirics to follow the same course. Some men, by dint of excessive egotism, manage to persuade their neighbours that they are very great men indeed; they publish their acquirements so loudly in people's ears, and keep up their own praises so incessantly, that the world's applause is actually taken by storm. The world at last takes them at their word, thinking that men who talk so big must have some merit to recommend them—that it is indeed a mighty trumpet which sounds so obstreperous a blast.* Acting on such a principle, and pointing to regular practitioners as an excuse for their conduct, what a commotion is raised by Holloway, Old Parr, Widow Welch, *et hoc genus omne.*

---

* The abuse of the medical pamphlet *dodge* is becoming monstrous. A physician, in visiting a short time ago, found his patient perusing a pamphlet extracted from a medical journal, on the disease under which he was labouring, which had been sent by some kind friend of the author, as a sort of advice gratis!

But if this practice be considered questionable, what shall be said of those medical men who lend their names to be hawked about as the patrons of bitter beer, curious meal and nutritive pease-brose, under grandiloquent names, moving eyes, clear spectacles, galvanic batteries, walking-sticks and portable beds, and various articles of complicated contrivance? In some instances it may be that the medical man is inveigled into an advertisement, by giving a written expression of his opinion, to be used, as he supposes, in a private way, so that when it appears in the puff he cannot deny his written document, however unwilling he may be that his opinion should be publicly shown off; yet, in not a few, the testimonials are deliberately given, in the knowledge that they will be pawned upon the public through the medium of newspapers, hand-bills, locomotive advertisers, and the like. Now, the quack may triumphantly point to such exhibitions, as a sufficient apology for noising abroad his inert or dangerous *specifics.* The public are becoming so accustomed to this nuisance, that it is the duty of medical men to be cautious how they give any written opinion of drug or diet which may be distorted into a general recommendation, flashed in the eyes of every by-passer, and used as a bait to the unwary. For in doing so, they are not merely aiding the propagation of schemes too frequently altogether dishonest, but they are, further, breaking down the very barrier which they ought jealously to maintain between the domain of scientific medicine, and the contiguous strongholds of shameless quackery.

The author of the first pamphlet treats his subject under the heads of mesmerism, homœopathy, hydropathy, and arrant quackery, all of which we cannot notice at any length, but may remark that they are treated with considerable tact.

Animal magnetism, or mesmerism, and its various branches, have been so often treated of and their fallacies exposed, especially as to their claims to be considered as means of curing diseases, that they hardly need mention. They are now rarely heard of in this part of the country. A short time ago an attempt was made to introduce a mesmeric physician into an hospital in the north, but the decided attitude taken up by the profession in that quarter, happily soon terminated in the defeat of the disaffected. The newest kind of the mania, was a transatlantic form of the delusion which was imported into this country under the somewhat scientific title, electro-biology. This was so admirably exposed in a pamphlet by Dr. Andrew Buchanan, that curiosity was replaced by disgust, and for some time the whole tribe have disappeared. The last who tried his skill in emptying the pockets of our fellow-citizens, by the aid of the combined sciences of electro-biology, clairvoyance, and second sight, was hissed from the platform and somewhat damaged in person by the infuriated audience, who discovered the imposition and exposed the exhibitor. We presume that since this *contretemps*, the professor has betaken himself to some more propitious clime; at all events, if he is still in this country, he has retired into the bliss of private life, nor has any successor been found to take his place.

---

* Dr. Mackay on Popular Delusions.

We are in daily expectation of a visit from a few "rapping spirits," and have given orders to our upholsterer to hold himself in readiness to be called on an emergency, if our tables and other articles of furniture show the slightest symptoms of a desire to move off. The clairvoyants have no chance, now that the ghosts and warlocks are condescending to visit us again under a new guise, and the tables and chairs are showing decided signs of intelligence, by seeming to have a league with the powers below. We are informed, too, that already "the revolving hat" constitutes a popular evening amusement in fashionable circles, to the equal delight of the youth of both sexes, who highly relish the electric thrill which passes from digit to digit.

Homœopathy.—No medical heresy has obtained such mastery over the minds of the public in modern times as homœopathy. Our first author for this reason, doubtless, devotes considerable space to its consideration, while Dr. Simpson furnishes us with a goodly octavo, entirely occupied with an investigation into its tenets. The reasons why homœopathy has been so extensively embraced in England are manifest. The apothecary system, and the abuse of drugs consequent on it, added to the well-known credulity of the public, to which reference has already been made, are sufficient to account for its popularity. The casual and superficial observer sees not the defects but the apparent simplicity and beauty of Hahnemann's system, and naturally prefers the minute and tasteless globule to the bulky bolus, or nauseous draught. He is unable to draw a line of distinction, between a science founded on the experience of all ages and all countries, and a modern delusion fostered for purposes of self-aggrandizement. He reasons that since men of equal mental calibre, having received the same education at the same schools, emerge to practice on totally different principles, therefore, all is confusion; and that of the two evils presented for choice—the old and the new methods of treating disease—the latter is undoubtedly the least. He adopts it, blind to the fact that it is trusting to his credulity that men have come forward to pursue their knavish practices. We shall not waste much space on an exposure of the fallacies of homœopathy, referring our readers to "The Sophistry of Empiricism" for a condensed—to Dr. Simpson's for a more complete—view of the grounds on which they unhesitatingly condemn it.

We conceive homœopathy to be nothing more or less, than a system of fraud and imposition, ingeniously calculated to succeed. The grand doctrine of Hahnemann is simple enough—"similia similibus curantur." "It is not possible," he says, "to perform a cure, but by the aid of a remedy which produces symptoms similar to those of the disease itself." Nothing possibly can be easier than to prove or disprove the truth of this law, and this can be done in two ways. First, by showing that a medicine which produces in the healthy system a certain train of symptoms, has the power of removing these symptoms when they follow on a morbid condition; and, second, by proving that no medicine ever cured, which had not the power of "producing symptoms similar to those of the disease itself." In other words, was any cure ever effected by allopathy,—or was any disease ever cured except by homœopathy? Dr. Simpson, in the work before us, has condescended to examine minutely the evidence, which has been adduced in support of the reality of the natural law of Hahnemann, and most clearly, from the very facts relied on by him and his followers, has exposed its falsity and absurdity. In this, as in the other parts of his work, he has, as we humbly conceive, most grievously misspent his time, and misapplied his talents and critical ability. To argue philosophically, and to reason calmly, on an unphilosophical, nay, on a ridiculous and silly matter, tends to depreciate the value of criticism. As well might Dr. Simpson enter into an erudite discussion of the probabilities and improbabilities involved in the exploits of the celebrated Jack the Giant Killer, as waste his powers in showing the doctrine of Hahnemann to be untenable and irrational. Ridicule and scorn are the shafts which should be directed against the hydra of quackery, not reason and argumentation.

The University of Edinburgh has obtained an unenviable notoriety, not only as the constant arena of professional dissensions, but also as the hot-bed of medical heresy. The very fact of Dr. Simpson spending so much labour on an elaborate attack on his colleague, betrays the firm footing on which the latter has already established his false doctrine, and the fear of the former for the orthodoxy of Edinburgh students, who *must* all attend a course of Dr. Henderson's lectures before applying for their degree. The literary *tilts* between members of the medical profession in Edinburgh are certainly very amusing; but while they have the effect intended—increasing notoriety—they are not unfrequently as ridiculous as entertaining. We rather suspect that the publication of Dr. Simpson's book will result in drawing additional attention to a delusive system, which might dwindle away if left unheeded or only spoken of with scorn, while it will gain fresh publicity with each attack, especially when a man of such eminent talent as the Professor of Midwifery "stoops (in an attempt) to conquer."

The doctrine or practice of infinitesimal doses is equally absurd with the law of which it is a corollary. Dr. Simpson has bestowed great labour in exposing it, and the calculations are conducted with a degree of logarithmic accuracy which, under other circumstances, would be highly commendable. The display of figures is startling. But in case there should be any sceptical as to the impotency of homœopathic drugs, let us quote from Dr. S.—

> "About twenty homœopathic globules make an inch, and if each of these contained a decillionth of a grain, as some homœopaths profess to use them, a continuous row of these decillionth globules would make a line which would stretch from the bottom of the Pacific, not only as high as Chimborazo, or even as far as the moon; but it would extend many, many times from the sun to the outermost planet in our system; or even as far as any known star. A grain of belladonna, or other of their drugs, distributed in such decillionth-dose globules, would make continuous lines many, many million times longer than all the railroads and other roads that ever were, or ever will be, formed on the face of the earth; nay, they would cover the surface of all these roads many million times in all their lengths and breadths. And yet, say the homœopaths, take a pin's point and lift out a few of these belladonna globules spread out on these interminable lines of road, and you will cure with them a case of scarlet fever." P. 13.

After this one is not surprised to hear Dr. Simpson exclaim, that *common sense* is outraged,—an exclamation in which all sensible people must concur; and yet, with a strange perversity, our author thinks it absolutely necessary to devote 286 pages to the examination of a system which, at the very outset, he denounces in such terms. We have chapters on the theological view of the question; and an exposure of a silly sermon from a silly clergyman,—curious facts relative to our national malady, and the homœopathic view of it—a disquisition on the state of homœopathy in Austria—modes of preparing globules—perplexing calculations as to the strength of said globules—an essay on human credulity, and so on, *usque ad nauseam*. We confess, however, to no little amusement, and some instruction, from the perusal of Dr. Simpson's work. It must have been compiled with great industry and labour; but there is a thorough want of method, arrangement, and, above all, condensation. We are fully aware of the disadvantages which such an eminent man as Dr. Simpson has to contend with in engaging in authorship, but most earnestly would we urge him to devote his leisure and talents in future to the advancement of medical science, and not to the exposure of follies, such as those of homœopathy. The result of all such works as his is the reverse of what is intended. The cry of persecution is raised, and instead of being warned and deterred, the credulous and gullible public is more firmly than ever enthralled in the sway of quackery, and a new lease of prosperity is given to the quacks.

Hydropathy, on the whole, is the most harmless of the false systems before us. Nay, we will go a step farther, and admit that in many cases of chronic ailments it may be, and has been, of great service, even when applied on the erroneous principles of its exclusive supporters. The dyspeptic and hypochondriac, and the fashionable *roué*, who has spent several months of the season in exciting and pandering to his appetites, will no doubt be benefitted by the simple fare and moderate exercises prescribed and enforced at hydropathic establishments, just as they would be by a similar abstinence at any other place, especially if combined with a gentle course of health-giving amusements, as walking, driving, riding, rowing, &c. The benefit in such cases is evidently to be traced to the nourishing and unstimulating diet, the pure air, the absence of anxiety of a mind free from business, and enjoying a pleasant relaxation, and a firm faith in the medicinal virtues of cold water. While, then, we object to such *medical* establishments as are to be found at Malvern and Ben-Rhydding, in England, and Rothesay in Scotland, and other places, we do so because the upholders of the system place its benefits in a false light, and because it is a demeaning of the profession, for a medical man to be the proprietor of what is nothing more than a bathing establishment and a temperance lodging-house.

The employment of cold as a therapeutical agent is by no means a new discovery, nor is the application of it by means of water, either in bath or douche, to be attributed to the hydropathists. It has been employed in the practice of medicine for ages, and, though apt to be brought into disrepute by the overstraining to which it is subject, may be often employed with great advantage in many cases. It may, in truth, be said that whatever merit belongs to the treatment of disease by cold water, is the property, and has been filched from the province, of legitimate medicine, while the absurdities of *packing* and *poulticing* the patients, in a combination of wet cloths and feather beds, may be fairly conceded to the ingenuity of our *aquatic* brethren. But when we admit that there are some diseases, chiefly of a chronic and simple character, which may be benefitted by the simple fare and bracing atmosphere usually to be found at these establishments, we repudiate the idea that it is capable of being applied to a hundredth part of the diseases which come before the notice of the physician. It is the extolling it to the place of an almost universal elixir, which constitutes the *danger* of the system. It is the macerating and drenching the victims with water, out and in, which constitutes its *absurdity*. The following passage from the first pamphlet indicates the author's opinion:—

> "But it may be asked, is there not something almost miraculous in the virtues of the cold wet sheet? It is, certainly, not a little surprising that some of our fashionable people would condescend to enclose themselves in this refined sackcloth; but making all due allowance for the discrepancies of human character, it undoubtedly

indicates a more ardent faith than might, *a priori*, have been prognosticated, considering the icy vibrations that thrill from this battery to the very diaphragm. But this is not all the elysium in store for the patient; he is speedily carried from the arctic to the torrid zone, there to fry for a season, and luxuriate in all the delights of sweat and swaddling-clothes. This ingenious device, however, although not superlative in its superiority, is still of some service to the public, for it relieves the plethoric alderman of the surplus of his turtle soup, and those whose faces are purple from the juice of the grape, of the alcoholic ferment which is about to breed organic evils in the brain, liver, or kidneys. Besides all this, it vastly accommodates those indolent persons who will neither walk, dig, or climb Skiddaw or Helvellyn." P. 63.

In addition to the classes already noticed, there are a large number of persons who, without any pretension to science, presume to treat diseases by various means. These are often known as the real *quack doctors*, men who have had no education, and who make a boast of it—herbalists, worm curers, bone setters, and the whole race of pill, wafer, and salvemongers. These wretches would be beneath notice, were it not for the hold they acquire over such multitudes of deluded victims, and the fortunes they often accumulate. The doings of the Wing woman, so well drawn by Mr. Richardson, in the *Association Journal*, present a lamentable picture of the credulity of our countrymen. The whole subject is loathsome, and is only to be treated in that tone of derisive contempt in which the author of the pamphlet very properly indulges.

In conclusion, it becomes the duty of medical men, as the natural guardians of the public health, to consider if any check can be put to this growing evil. The various licensing bodies have the power, if they think proper, to punish parties who trench on their prerogatives by practising medicine or surgery without due qualification. But that would not reach a tithe of those advertising impostors, who do not pretend to such knowledge as would enable the law to take hold of them, but content themselves with vending such universal elixirs as would seem to require no knowledge for their application. We believe that no system of penal enactments will be adequate to root out the offenders. If a free Briton makes up his mind to swallow a quantity of ideal medicine, and to pay handsomely for the stuff he takes, no code of laws will ever prevent him. Such must be left to the issue of their own folly.

But we are of opinion that the prescribing or ordering of medicine, by any one who represents himself as a practitioner of medicine, but who does not possess any legal qualification to practise, should be considered a criminal offence, and, as such, should not be left to the tender mercies of the licensing bodies, but should be dealt with by the public prosecutor. In this way a host of those vile pretenders, who tend to throw discredit on our benevolent calling, might be swept from their unlawful position.

Finally, it devolves upon the members of the profession to purge out errors *ab intra*. As long as medical men, instead of working harmoniously together, indulge in petty jealousies and personal dissensions, it is hopeless to expect that unanimity of feeling which, while it would put an end to all that is degrading and empirical, would exhibit the gratifying spectacle of a class whose aims are humane and noble, actuated by those feelings alone which can animate honourable men following an honourable career.

II. *On Diseases of Women, and Ovarian Inflammation, in Relation to Morbid Menstruation, Sterility, Pelvic Tumours, and Affections of the Womb.* By EDWARD JOHN TILT, M.D., Senior Physician to the Paddington Free Dispensary for the Diseases of Women and Children, &c. &c. Second Edition. London: Churchill, 1853.

SUCH is the elaborate inscription of a large, thickly printed book, which, in the copiousness and minute detail of its materials, is a fitting counterpart to its title page. The remarkable aggregation of references, the multiplied cases, the impossibility of determining the precise relations of the symptoms of female sexual disease which are detailed, and the suggestive rather than didactic character of the work, make it also better suited for the careful personal study of our readers than for our analysis. It seems to us that the modest heading of "Memoires pour servir a l'etude des Maladies des Ovaries," assumed by M. Chereau, would have still proved a distinctive enough designation to the present treatise.

Dr. Tilt is known as a frequent contributor of papers on ovarian diseases in various periodicals, and also by his volume on the Diseases of Menstruation, &c. which he desires to have considered as the first edition of the present work. His former monograph was a neat, small octavo, the unobtrusive size of which contrasted favourably with that of certain contemporary bulky volumes on kindred subjects, and which, permitting it to be disposed of in the pocket, made it a convenient companion; and, along with its short, unincumbered, narrative style, and, to most medical men, its new views of the pathology of the female sexual organs, gave it quite a run. The volume before us, besides the account of ovaritis, which formed nearly the whole of the first edition, has had added ten chapters on menstruation, and one on the pathology and treatment of sanguineous pelvic cysts; so that, although we do not deem it to be entitled yet to its new and captivating description of a treatise "on the diseases of women," we yield to it cordially the merit of presenting an extended plan of the natural and pathological history of the ovary, and an industrious accumulation of the *obiter scripta* of the subjects on which it treats, such as is not to be found in any other work.

The gist of Dr. Tilt's work, first and last, is to claim for the ovaries that presiding influence, on the disorders of menstruation and of the uterus, which recent discoveries have shown them to have on the healthy uterine functions. The effect on some of his readers—though at antipodes with the author's own opinions—has been to suggest an antagonism with the doctrines and practices of the French uterine school, which a few have pleasantly believed would henceforth afford an easy key to the elucidation of morbid conditions of the womb, independently of the speculum, by attention simply to the dynamic or natural signs, just in the good old way of a well put question or two, and a little quiet and easy conversation with their patient.

We regret we cannot join in these *peans* to Dr. Tilt. He seems to us to have left the examination of the uterus where he found it, and, following Piorry and Chereau, to have superadded certain excellent but troublesome, and it may be, in improper hands, indelicate modes of exploration of the ovaries, as separate objects of enquiry. These are introduced by some good suggestions on the manner of conducting the oral enquiries, the principal of which is, that they should be directed at first to points connected with our patients' health, which are not of a kind to create embarrassment, and insensibly to those which respect the menstrual functions.

The exploration of the ovaries he treats under the respective methods of palpation and auscultation of the abdomen, omitting percussion; of pressure with the index and middle fingers of one hand against the uterine extremity of the vagina, and with those of the other on the hypogastrium; of examination by the rectum, and also of pressure of the ovary between the fingers of opposite hands placed in the vaginal and rectal passages; or of the finger and thumb of the same hand similarly situated. We think we have succeeded best, in the vaginal examination of these cases, when the patient stood, and we have sometimes ascertained the presence of subacute inflammation of the ovary, even when no tumour was discernible, by the production of a highly characteristic pain along the groins, on succussion of the top of the vagina with the middle finger. In thin subjects, a painful enlargement of the ovary of the most moderate kind, may easily be demonstrated in any position of the woman, by means of the hypogastric and vaginal touch.

While looking at this and other parts of Dr. Tilt's book, we observe marks of haste and inaccuracy in the arrangement of his materials, which seem to intimate that multifarious occupations are not peculiar to the over-worked profession in the Scotch provinces. A townsman of our own, for example, is made to appear guilty, through an inaccurate quotation of the author's, of a gross grammatical blunder at this part of the volume.

Dr. Tilt's first chapter treats of the theories of menstruation.

Throughout the book the ovula are often suggested to his readers as a never-failing proximate cause of female complaints; but in this the ovaria rather than the ovula are acknowledged as producing menstruation. In his former volume, while he confessed its insufficiency, he adopted the ovular hypothesis as a convenient scheme for studying and cataloguing his facts. In the present, he retains this application of the theory, but he rather oddly admits also that there is no essential dependence between the process of ovulation and the presence of the menses.

The ground he occupies is, that there is a frequent coincidence only, between the discharge of ova and of the catamenia. We think that even this modified ovulist opinion is founded more on what seems to take place with quadrupeds in the season of rut, than on what occurs with the human female during the function of menstruation. Were women to discharge ova within the four or five days which succeed the commencement of the menstrual flow, as most quadrupeds do in the season of heat, their impregnation would be a rare occurrence. In the lower animals the uterine secretion is often wanting, and always scanty, while in woman it is copious enough to wash away more ova than are emitted by the most prolific quadruped, and much more to carry off the, in general, solitary microcosm which is propelled from her own ovary. In another part of his book Dr. T. refers to the frequent publication of dissections, as perpetuating the notion of the necessary connexion of menstruation with ovulation. We do not concur with this remark. We have repeatedly seen the opening into a discharged Graafian vesicle to be still patent, and sometimes the vesicle to be filled with a florid blood clot, in the third and fourth months of pregnancy, and in one case we found the corpus luteum of a woman in the ninth month, to communicate with the surface by a distinct foramen. It is thus clear that the mere observation of a rent vesicle filled with blood at the period of the menses, is far from being a proof that the former is a product of the latter. Looked at in this their correct light, many of the dissections alluded to by Dr. Tilt, including most of those originally published by Dr. Lee, of which so much has been said, as also that of Mr. Whitehead, quoted at page 87, instead of being proofs of the monthly discharge of ova with the menses, are decisive illustrations of the very reverse, and may be placed, with the most literal accuracy, side by side with Dr. Ashwell's and Professor Paget's cases, which Dr. Tilt has strangely described as being the only recorded cases, wherein menstruation was evidently neither accompanied nor caused by ovulation.

We think that an examination of Dr. Ritchie's cases will supply Dr. Tilt with many more. Cases 1, 2, 7, 9, in particular, of the seventh section of the first part of that writer's papers,* and 1, 7, and 11 of the seventh section of his second part,† are examples of this kind; while the ten dissections contained in his first section,* show that there may be both ova and ovulation, without a vestige of menstruation.

---

* Med. Gazette, Feb. 1844, p. 652.

† Op. cit, May, 1844, p. 137.

Dr. Tilt's next chapter treats of the natural history of menstruation. He refers largely to the vexed question of the period of the first menstruation. The facts on this subject are collected into a well-arranged and interesting table, from which it appears that the mean age at which the function commences is, in hot climates, 13·19; in temperate, 14·94; and in cold, 16·41. While the influence of temperature is thus shown to be undoubted, that of various other circumstances, such as hereditary temperament, national customs, the nature of the diet, and the habits of civilized life, are also found to modify the general principle.

In dealing with the important subject of the immediate cause of menstruation, Dr. Tilt gets happily rid of the "ovules," and treats of it in a spirit of more sober philosophy. He, for instance, states the cause to be a periodical increase of the ganglionic nervous power, and of the vascularity of the ovaries, accompanied by reflex irritation of the cerebro-spinal axis, the whole constituting what he calls the *ovarian nisus.* In almost as many separate chapters he analyzes the ganglionic phenomena of the process, such as monthly type, moderate increase of the animal heat, and of nutrition, slight flushes, epigastric faintness, and swelling and soreness of the breasts; treating of these in detail when, exceeding the limits of purely physiological conditions, they merge into a fortnightly or three weeks' type, with slight fever, chlorosis, frequent burning flushes, intense epigastric pain, and mammary neuralgia. In the same way he deals with the cerebral symptoms. These are, in the normal state, headache, slight drowsiness, nervous irritability, and fidgets; and their pathological analogues are intense headache, sopor, hysterical insanity, and convulsions. And so with the spinal symptoms, which he says are slight, dorsal, and hypogastric pains, with numbness and slight loss of the power of the limbs, converted in disease into aggravated pains in back and bowels, with local or general paralytic affections. He next discusses the various terminal results of the ovarian nisus, or the critical discharges. And first, from the generative surface, in a sanguineous or a mucous flow, which becomes diseased in amenorrhœa, menorrhagia, and vicarious hæmorrhage; and in intermenstrual, or menstrual leucorrhœa. Second, from the cutaneous surface, as a general moisture, which lapses, when disordered, into drenching sweats. Lastly, from the urinary surface, as a full flow of healthy urine, converted in bad health into phosphatic or lithic acid urine, or into diuresis with absence or diminution of the solid contents.

Such is a specimen of the root and branch way in which our author deals with all his subjects, and which, if extended to the whole circle of female pathology, might well entitle him to be ranked as the very Astruc of our day. The above topics alone, extend over about one hundred large 8vo pages. We cannot, of course, follow him through every paragraph, but may repeat some things which possess a practical interest. He states that the bi-monthly type of menstruation is often induced by improper lactation, inflammation of the ovaries and of the neck of the uterus, the frequent application of caustic to the latter situation, and the abuse of purgatives; and he recommends its treatment by quinine, so useful in asthenic inflammation in other mucous tissues, and likewise in neuralgia of the genital organs, so often associated with a sub-acute state of inflammation, and highly disordered menstruation. In the removal of epigastric pain and other ganglionic symptoms, he has great confidence in camphor, so freely used in puerperal nervous irritation by the German obstetric physicians; and in opium, belladonna, and hyoscyamus, especially the latter, so often of such benefit, as well as some other sedatives, in certain diseases of the uterus. In hysteria, cold water, externally and internally, is nearly a specific; and in neuralgia of the mamma, heat, by means of what he calls a cotton-wool poultice is, as we have ourselves known, an excellent remedy.

---

* December, 1843, p. 362.

The next hundred pages of letterpress, consisting of twelve chapters, are filled with similar laborious and diffuse, but yet often interesting, notices of inflammation of the ovary. This division formed the staple part of Dr. T.'s first edition, and in a review of a succeeding edition they scarcely fall within the legitimate line of analysis. We may perhaps be excused, however, making an observation or two.

Dr. T. divides his subject into what he calls sub-acute and acute ovaritis. One would naturally suppose that by the former term was meant the designation of a state constituting a kind of middle condition, between chronic and acute inflammation of the ovary. But Dr. Tilt does not so employ the term. He makes use of the Latin preposition, as indicating a limitation of acute inflammation to certain small portions of the ovary, the vesicles, and their immediate vicinity, and not as descriptive of a lower type. We think that in this Dr. T. does violence to all the analogies of language; but this is not the point on which we wish to speak. He assumes sub-acute ovaritis to be nothing more than the conversion of the monthly physiological excitement for the elimination of an ovulum, into inflammation. We do not discover, although we have sought for it in his pages with some care, any proof adduced in support of this statement. We see a reiteration of the assertion merely. "The periodical congestion of the ovaries is," he says, "an acknowledged fact." Granted. And, again, "the fact of the physiological irritation of the ovary passing into inflammation, *is confirmed by the phenomena of ovulation as they may be studied* *in the lower animals, and may be accidentally met with in women.*" Really M. Negrier's crude assertions in the same direction, are scarcely more gratuitous than Dr. Tilt's. It is very probable that an habitually exalted nervous and vascular orgasm of the ovaries, is often an introduction to their inflammation; but that ovulation occasions this orgasm, or is itself sometimes of the nature of inflammation, is precisely what we need to have proven. By "the phenomena of ovulation, as seen in the lower animals," Dr. Tilt means the representations made by Pouchet, whom (p. 31) he quotes, "of the redness and vascularity which are seen in vesicles about to burst being signs of intense inflammation, and of extensive ruptures coinciding with this more intense inflammatory action of the ovary, and, in the midst of these, of their sometimes being a black patch, which has all the appearance of gangrene." What, we ask, is all this other than the repetition of Dr. Tilt's assertion, in the excited and pathologically erroneous language of the French physiologist?

At page 142 a highly vascular appearance of the unopened Graafian vesicles, and a thickening and induration of their coats after their contents have escaped, are given as proofs of inflammation. If they be so, there is not a menstruating woman whose ovaries are not inflamed. These phenomena are essential to a state of health. In acute ovaritis, no doubt, when the case is recent, the vesicles will be found vascular, but they will also be softened and purulent. It is of what he calls *sub-acute* ovaritis, however, that Dr. T. adduces them as proofs. In prostitutes, all of whom, as a rule, are the subjects of peritoneal inflammation of the ovaries, and also amenhorrhœa, the Graafian follicles are always found pale and of delicate texture, and quite wanting in marks of recent ruptures. Again, in healthy menstruating women, the ovarian cells are not projected to the surface like so many red hot balls, as our author's description (p. 31) might lead us to conceive. They pass from the centre of the glands, and perforate the peritoneal coat, in a way of the most gradual and progressive interstitial absorption. The thinning process in the outer covering of the ovaries is so slow, that it is often inappreciable by the naked eye, at a time when by boiling and other expedients, the actual begun absorption of the peritoneal coat can be easily demonstrated. The solution in the continuity of this latter generally corresponds in extent with the size of the subjacent vesicle, but in the vesicle itself the opening is never more than what is barely sufficient to give exit to the ovulum.

With these remarks we leave the subject, although, if an exaggerated form of the healthy elimination of ova from the Graafian cells be sub-acute ovaritis, as Dr. T. alleges, we are at a loss to comprehend how this can be produced either by cold, stimulating injections, or any of the injuries of the uterus which he describes so fully as its exciting causes. Into the consideration of these we cannot from want of space enter. The practices of suspending the uterus like a cap of liberty on an iron spike, or converting it into a galvanic trough, of thrusting the finger or bistoury into its neck, or excavating its sides with caustic potash, are, we hope, becoming extinct.

Dr. Tilt concludes his volume with a chapter on sanguineous pelvic cysts. We have seen several such, just in their initiative, consisting of folds of the broad ligament gathered round the ovary, and agglutinated together by lymph. They were usually sprinkled over with vesicles of various sizes, and contained small cysts of fluid blood, and the ovary in a state of softening, and begun absorption. And we have seen one case of long standing and great advancement, which was fatal from the rupture of one of its cysts, and the discharge of its contents into the cavity of the pelvis. Both Fallopian tubes were occluded, and distended into membranous bags, which were filled with a bloody fluid which did not coagulate. One of these cysts had contracted an adhesion to the bladder, which it habitually compressed, and prevented from expanding sufficiently to contain more than a couple of ounces of urine. The other had slid down into the recto-vaginal sac and lower pelvis, and, there is reason to fear, was broken during an examination by the rectum. Dr. Tilt relates a number of examples, and states their cause to be whatever may occasion mechanical obstruction to the free exit of the menses. But our limits are expended, and we must take leave of our author, congratulating him on having selected for elucidation a branch of pathology which is so full of interest as a matter of science, and his continued cultivation of which, in the spirit in which he has commenced, is so likely to prove a benefit to suffering humanity.

III. *Remarks on Hysteria in Connexion with Hydrophobia and other Convulsive Affections, with a Glance into the Mesmeric Mystery.* By John Dalziel, M.D., pp. 32.

We have no objection to subscribe to the general truth of the ancient dogma, that "a great book is a great evil;" but, in the present case, we cannot help thinking it unfortunate that the author of these "*remarks*" has chosen to lay them before the profession in the form of a separate pamphlet. The reader is at once startled and prejudiced unfavourably, by the immensely wide scope of the title, and the narrow limits of the treatise. We shall, however, allow Dr. Dalziel to speak for himself regarding the past history and present object of his pamphlet.

In his preliminary statement he informs us that—

"Upwards of twenty years ago a brief outline of the following remarks appeared in the *Glasgow Medical Journal*, interspersed with sufficiently complimentary editorial criticism. For the satisfaction of the reader, the entire article, as published in that journal, is subjoined. The original (*in extenso*) is now evoked from its long slumber by the sympathetic tones of Dr. Marshall Hall of London's ingenious disquisitions, lately published in the *Lancet*. In now submitting his views to the public, the author trusts he is animated by higher motives than the mere desire of proving a priority of discovery over a rival writer:—He aims at the furtherance of the cause of truth. His argument is this:—There is a striking coincidence, without concert, between his own leading principles and those of Dr. Hall Now, the very fact of a coincidence of this kind is, in sound logic, a strong *a priori* argument that the speculations of the respective authors are founded in truth.

"There is yet another reason for the present publication:—It supplements, in several points, the views of Dr. Hall. What these points are it is unnecessary for the author here even to mention. They will be readily singled out by any who may choose to take the trouble of doing so; and their importance will, he trusts, be duly estimated by the profession at large."

From the opinion expressed in this last sentence, we must be allowed to differ; for however clear the points of his essay may have appeared to the author himself, we have not found that they are quite so "*readily singled out*" as he seems to imagine. In truth, notwithstanding a great appearance of logical strictness in the commencement of the essay, the reader is constantly perplexed by the introduction of new subjects, which in turn are as summarily dismissed as their predecessors. Thus, while the paper begins with a disquisition on hysteria, he very soon tells us (p. 7,) "*in limine*, that, as the following remarks are principally intended for the elucidation of *hydrophobia*, *any references to hysteria* are to be understood as illustrations of principles common to both these diseases." A similar want of arrangement and individual treatment of his subordinate subjects pervades the whole essay, and makes one sigh for the isolated dogmata and the numbered paragraphs of his "rival writer," Dr. Marshall Hall.

But notwithstanding these strictures, we are of opinion that Dr. Dalziel's pamphlet contains some striking and original remarks; that it justifies a claim, only very modestly hinted at by him, to a share, along with Dr. M. Hall, of the honour of having first directed attention to the connexion between the closure of the glottis and the convulsion of the frame, and pointed out a probable source of relief to a class of sufferers, whose mortal maladies seemed to lie quite beyond the limits of human aid.

In considering for a little the important question which Dr. Dalziel ought perhaps to have chosen for the title of his essay, viz. the connexion between spasmodic closure of the glottis and convulsive seizures, we shall follow the order of the three propositions at which Dr. Dalziel has arrived in his essay, but from which his discursive style led him to depart. They are shortly as follows:—

"1st. That the *globus hystericus*, as well as the similar affection of the throat in hydrophobia, occasioned by the idea, &c. of liquids, is a spasmodic stricture of the muscles of the throat, (*glottis*,) whereby respiration is obstructed.

"2d. That *obstructed respiration*, whether *suspended* or *impeded*, occasions cerebral congestion, as well as that feeling of *general uneasiness*, designated *sensation* *of suffocation*, which attends the paroxysmal exacerbation in both the diseases under consideration:—and 3d. That cerebral congestion, and the sensation of suffocation, separately or conjointly, may, especially in an irritable habit, occasion *convulsion.*"

Our author does not seem to consider it necessary formally to prove these conclusions, as he believes that all of them, "at one time or other, have been distinctly recognized as isolated propositions;" but he does claim originality for the catenation of them into one theory of convulsion. There are, however, he confesses, some debateable points, and these he professes to take up in the body of the essay. Now, without the least wish to be hypercritical, we cannot for one moment admit the truth of the first of these propositions, nor are we aware that it has ever been granted by any trustworthy authority. There is no proof of contraction of the glottis *in a great majority* of cases in which the hysterical globus is present. The physical signs of the former state are all absent, and the familiar course of the latter is widely different from that which a glottidean spasm would pursue. Moreover, the two phenomena sometimes coexist in the same case, and are even then easily distinguished from each other; but we cannot occupy space here with the distinctive marks of hysterical laryngismus and globus. Suffice it to correct an error of Dr. Dalziel's regarding the opinion of Cullen upon this point. Cullen makes no allusion to contraction of the glottis in hysteria as the cause of globus, but simply says that the *ball*, after moving about in the abdomen, "rises up to the top of the gullet, where it remains for some time, and *by its pressure on the larynx* gives a sense of suffocation."* We can, however, hardly assent to this theory of globus, any more than to that of Dr. Dalziel; and yet we have no very positive statement to make on the subject. There can be no doubt that the sensation originates in flatulent distention of the stomach,—that this is the ball which rises in the abdomen; and it seems more than probable that the globus is merely a morbid sensation, produced on the vagi nerves in the stomach, and referred erroneously by the patient to the extremities of its pharyngeal branches. There is no necessary contraction of the glottis produced at all, and the heaving respiration is a voluntary effort on the part of the patient, to rid herself of the false feeling of pressure at the top of the gullet. The real globus is in the stomach, not in the throat, and whenever the morbid accumulation of gas in that organ is dispelled, the false sensation is at an end.

"In respect to hydrophobia," says Dr. Dalziel, "it is also admitted that the attempt to drink, the mere idea of drinking, or of liquids, excites 'a spasmodic constriction of the muscles of the pharynx,' (extending, of course, to those of the larynx,) whereby respiration is obstructed: and that a sensation of suffocation and a convulsive paroxysm ensue."

Thus briefly is hydrophobia disposed of by our author, but we should have expected some reference to the parties who admit what appears to us a very unwarrantable statement. We confess our ignorance of the authors, who are here alluded to. Nor can we admit the "of course" in the parenthesis, both because the dread of water, which is the feeling to be accounted for, is a mental, not a physical phenomenon; and also more especially, because the spasm of the pharynx in hydrophobic cases seems actually to be confined to it. It is excited at first by the contact, and afterwards by the fear of water, but does not seem to extend to the larynx, for the patient can breathe and speak and cry aloud—none of which acts could be performed while the glottis was spasmodically closed.

---

* First Lines of Practice, vol. ii. p. 494.

But we must follow Dr. Dalziel in his rapid march; for we have already, at sufficient length, indicated the manner in which he supports the first of his propositions; and, perhaps, it will not be a rash supposition on our part that our readers agree with us in estimating his arguments at something short of a demonstration. Dr. Dalziel is, nevertheless, determined to bring the argument to an immediate issue: for he adds—

> "Now it is my express object to show that the convulsion is to be attributed entirely, though indirectly, *to obstructed respiration*, and not to the accompanying circumstance of the local spasm, or pain attendant on the spasm. The competency of obstructed respiration to occasion convulsion, will be fully made out by establishing the second and third propositions; but the second term of the second proposition and the first of the third are also admitted. The only link awanting, then, to complete the chain, is the proof that obstructed respiration produces cerebral congestion. If the one can be shown to be the invariable result of the other, the theory is complete; but, though there may not in every instance succeed cerebral congestion, there will uniformly be found the sensation of suffocation ready as a substitute."

Our author, consequently, proceeds to establish the proposition expressed in the two last sentences of the above quotation; and upon this part of his essay we shall not enter, because, while we might object to the mode of his argument, and think that he might have brought forward stronger reasons for his conclusion, still, in the main, we cannot object to the conclusion itself.

The matter, then, stands thus:—Dr. Dalziel has, in our opinion, failed to establish, or rather is wrong in assuming, his first proposition, but we do not object to either the second or the third; for obstructed or impeded respiration does occasion cerebral congestion, and cerebral congestion *may* occasion convulsion. We are, then, simply at issue with our author regarding his first proposition, and in respect of it chiefly when stated, as he does state it, in the form of a theory of globus and the hydrophobic sensation. Herein does Dr. Dalziel differ from Dr. M. Hall, inasmuch as the latter never attempts to identify a *morbid sensation* with laryngismus, which is a *reflex contraction* of the glottidean muscles. With him we agree, and yet we feel disposed to accord to Dr Dalziel the honour of having formerly pointed out, however obscurely, that such a contraction if it did exist, may produce congestion of the brain, and thus indirectly cause convulsion.

But though his claims to priority, in regard of the theory of convulsion, may appear doubtful to some, yet we cannot think that any will deny him the credit of having suggested the same remedy, as that which has of late been proposed by Dr. Marshall Hall. For we find the following very distinct statement in the pamphlet before us:—

> "Admitting the truth of these propositions, it naturally follows that, as a palliative measure in the treatment of hydrophobia, the operation of bronchotomy might be expected to ward off, or at least abate, the violence of the convulsive paroxysm. And there are other consequences (afterwards to be noticed) equally, or still more injurious, which this measure would tend directly to obviate."

But, it is quite obvious, from the tenor of the whole essay, that he contemplated the application of this measure to all convulsive diseases—seeing that he considers that feature of these diseases to depend on one and the same prominate cause, viz. cerebral congestion. He even mentions epilepsy, the very disease for which Dr. Hall has proposed tracheotomy, as a means of alleviating the seizures, and, indeed, Dr. Dalziel uses very much the same arguments as does his "rival writer." For he says:—

> "The whole history of hysteria, indeed, and especially its occasional termination in *epilepsy*, goes to prove that cerebral congestion is the immediate cause of the paroxysm. Flushing of the face is a common symptom, and its occasional absence, with paleness in its room, may readily be accounted for by admitting that the disease is combined, or alternates with syncope, or a partial cessation of the action of the heart."

We cannot now afford space for even a peep at Dr. Dalziel's *Glance at Mesmerism*, the omission of which would not, in our opinion, have detracted from the value of his essay. We have only room for the concluding remark, that while we are not convinced of the necessity for tracheotomy in hydrophobia, without better proof of the occurrence of laryngismus in that disease than we at present possess, and while the cases of epilepsy are rare, and those of hysteria still rarer, in which the operation would be warrantable, yet we consider the proposal of that measure *in certain cases* of convulsion as an important addition to the available resources of rational medicine.

IV. *Chemistry. Tables Introductory to a Course of Testing in Qualitative and Quantitative Analysis.* By JOHN MACADAM, F.R.S.S.A., Lecturer on Chemistry, &c.

THESE tables have been compiled chiefly, the author says, for the use of students attending his own laboratory, being intended as a guide to them during the earlier periods of their study. In their compilation, he has availed himself freely of the suggestions and experience of various eminent chemists of our own and other countries, and is principally indebted to the Geissen School, and the works of Fresenius; while in the selection of the materials and the rendering and arrangement of them, he adds, he has been chiefly guided by his own experience of what is most suitable and convenient to the student.

Bearing in mind the long list of text-books, hand-books, and introductions to chemistry, which have of late years issued from the press, all of which have their excellencies, and one or other of which, we believe, is the favourite directory for study in every class-room and laboratory, we were scarcely prepared to believe that another, either larger or smaller, was wanted. In these days, however, every teacher seems to strive after another, and what he thinks, a better mode of instruction than others follow; and resting on his own experience of what is convenient or useful, he arranges, in some new order, things perhaps previously familiar to the pupil. In former times, to do so—to depart from the beaten tract—would be to imperil the reputation and hazard the success of the teacher. But that this is not now the case in chemistry, as in other classrooms, we have abundant evidence in the different manuals made use of. Though much of the ardour with which chemistry is now pursued is to be traced to the greater importance it is every day assuming in the investigation and treatment of disease, and to the daily improvement it is the means of achieving in manufacturing processes, still we believe that not a little of it may with justice be referred, to that stimulating influence upon the beginner, which arises from the novel and attractive forms in which everything is brought before him. We regard, therefore, with favour every attempt to facilitate the acquirements of a knowledge of a science and of an art so important, and, despite our previous observation on the differences which are made in class manuals—too often for the mere sake of variety—we commend Mr. Macadam's production for the method, the clearness of description, and succinctness of expression which mark the compilation.

SELECTIONS FROM MEDICAL JOURNALS.

I. MR. BENJAMIN W. RICHARDSON ON A NEW ANÆSTHETIC AGENT.

At a meeting of the London Medical Society on the 20th May, Mr. Richardson read a very interesting paper on the anæsthetic properties of the Lycoperdon Proteus, or common puff-ball.

" A few months since, I had a conversation with my friend Mr. Henry Hudson, a Leicestershire surgeon, on the management of bees; and was particularly interested in his description of an old, and, as I now find, very prevalent custom, of stupifying these insects with the smoke of the fungus known under the name of puff-ball, before

extracting the contents of the hive. By this stupifying process, the bees, I was told, could be rendered inactive and insensible for several minutes; but that they all recovered eventually in the most perfect manner, and that the cruel practice of destroying them with the fumes of sulphur was thus avoided.

"This practice of rendering bees insensible by inhalation, is so much like the modern plan of producing narcotism in men and animals by ether and chloroform, that my mind very naturally seized the analogy; and I was induced to perform a series of experiments on animals with the fungus.

"My first experiment was made on the 28th of last March. A kitten was placed in a bell-shaped glass vessel, open at bottom and top. Smoke from a piece of the fungus ignited was allowed to rise pretty freely into the bell; but several interruptions occurred, so that thirty-five minutes elapsed before any positive effect took place. By that time, however, the creature was fairly narcotized: a cut in the ear produced no sign of pain. The breathing was reduced to eight respirations per minute, and the temperature of the body was lowered. From time to time, after removal from the bell, I counted the breathing and the heart-beat, and found them gradually increasing in number, and the body becoming warmer. The sleep, however, was profound; and, after a period of two hours, no sign of sensibility to pain could be elicited. I laid the animal down by the side of her mother, and in the morning found her skipping about as well as ever."

Several other experiments are detailed, in which the circumstances were altered, but all confirmatory of the power of the new agent.

"It occurred to me to give the narcotic in connexion with oxygen gas: the fungus was therefore burned in oxygen, and the dense fumes produced were clarified by caustic potash, and were passed into the glass bell, together with some free oxygen. A young cat was placed under the bell: she became uneasy in thirty seconds, and was fairly narcotized in a minute and a-half. On removing her from the glass, the respirations were forty-six per minute, and the insensibility of the body was perfect. She recovered in four minutes, and ran out of the room.

"The fumes of the fungus, when clarified with caustic potash, and diluted pretty freely with atmosphere, are not unpleasant to breathe. On Thursday, I inhaled them myself in this form, for four minutes. They produced decided symptoms of stupor; the pulse was excited, and I was glad to sit down. These effects, however, passed off in three minutes, and I felt none the worse, except that the throat was somewhat irritated, and the voice a little hoarser.

"To sum up the results of these experiments: there is, it is evident, a principle in the fumes of the puff-ball capable of causing anæsthesia in animals. The physiological effects brought out by this anæsthetic are also very marked. In a liberal dose, it narcotizes rapidly and effectually, without unpleasant symptoms; and the narcotic effect soon passes off, leaving the animal in perfect health. In diluted doses, it produces intoxication and convulsions; is longer in causing anæsthesia; sometimes excites cough and vomiting, and leaves the animal for a long time stupid and unwell. When it is carried to the extreme, the respirations cease before the beat of the heart. Indeed, in observing animals under influence of the narcotic, it is only necessary to watch the respiratory movements; if these remain, even though reduced to the lowest, the animal will certainly recover on removing it from the cause of the narcotism. In this respect the narcotic principle of the fungus resembles the Woorali poison.

"The few conclusions, therefore, which it is in my power to offer with regard to this subject, are very insignificant, and are derived more from physiological observation than from chemical enquiries. However, they had better be stated.

"1. The narcotic principle is given off freely during the combustion of the fungus; and, as it exists in the fumes produced, is highly volatile.

"2. Combustion of the fungus in oxygen gas does not destroy the anæsthetic principle.

"3. The anæsthetic principle is not quickly absorbed or destroyed, either by water, alcohol, or strong alkaline solutions.

"I present these researches to the profession with great deference. I am aware that they are not so extensive as they ought to be, but they have cost me many weeks of incessant labour; and I put them forth as being calculated to lead to further enquiry into the narcotic effects of the fungi, by other and abler minds, rather than from an estimation of their own value. I have been desirous only to show that there is a principle in one of the fungi capable of producing narcotism in animals by inhalation. It remains to be seen, whether other plants of the same family possess similar powers; and whether a narcotic agent can be obtained from a fungus that shall admit of being employed in practice with no more trouble to the operator, and with less danger to the patient, than are entailed by the anæsthetic agents now in use. So important a subject is at least worthy of further investigation."—*Association Medical Journal, June* 3.

II. M. NELATON ON THE MEANS OF AVERTING DEATH FROM THE ADMINISTRATION OF CHLOROFORM.

M. Nelaton is of opinion that death in such cases, is the result of syncope produced by the vapour of chloroform; consequently, the means which he adopts to overcome this state, is the rapid and complete inversion of the body of the patient. On one occasion, while performing an operation in the hospital of St, Louis, he observed the face of the patient becoming pale and the pulse could not be felt. He immediately caused his assistants to seize the patient by the feet and hold him head downmost for an instant. The blood immediately flowed to the head, and respiration was re-established.

M. Denonvilliers having heard of this suggestion, put it in practice at the Clinical Hospital with success. The inversion of the body might also be applied to some cases of prolonged syncope, which have resisted the means commonly used.

M. Ricord's opinion, that death from etherization is the effect of asphyxia, has led to the employment of artificial respiration in cases of threatened death. In an operation for extirpation of the testicle, M. Ricord, observing his patient almost dead from the effects of chloroform, immediately had recourse to this means, alternately blowing into the air passages, and compressing the chest. This soon restored the movement of the heart. M. Ricord mentions that this is the fourth case in which he had successfully employed *insufflations.*—*Revue Médicale, Avril,* 1853.

III. ON THE INTERMEDIARY NERVE BETWEEN THE PORTIO DURA AND PORTIO MOLLIS OF THE SEVENTH PAIR.

Since the time that Wrisberg discovered the existence of an intermediary nerve between the portio dura and portio mollis of the seventh pair of cerebral nerves, there have existed between anatomists and physiologists widely different opinions as to the functions, distribution, and nature of that nerve. Perhaps this difference of opinion may be owing chiefly to the want of sufficiently exact anatomical examination of this nerve; therefore, to put into a clearer light so important a subject, Dr. Malaguti commenced fresh investigations and observations on the brain of a calf, with the intention of arriving at, in consequence of the greater development of the parts, less uncertain and doubtful results. So great is their importance that they are given without abbreviation.

Malaguti having laid bare the thick fibrous sheath which was formed of the external layer of the dura mater which encloses the facial as well as the auditory nerve; having cut and separated each of those nerves the one from the other, he was then enabled to observe some nervous filaments, which, as he says, owing to the reddish-gray colour with which they were furnished, presented the most lively contrast to the snowy whiteness of the nerves among which they were placed, and terminated in two distinct roots, one of which was found to be connected with the auditory nerve, the other with the facial, by means of some slender branches, and as they extended as far as the free extremity of the seventh, where they were out, so they appeared to be continued in a similar manner into the substance of the brain.

At first, says Malaguti, I was unwilling to believe what I saw, being doubtful whether these supposed roots, instead of belonging to the intermediary of Wrisberg, were not rather radical filaments of the seventh pair; but afterwards I was convinced that my first opinion was the true one, as, in addition to the different colour that they presented, I fully satisfied myself that, converging one to the other, they were lost in an elongated gangliform body, analogous to the geniculated ganglion that is met with in the human body. This peculiar reddish-gray colour, like the filaments above mentioned, is composed of a great number of the most delicate nervous fibres, intimately joined together by a swollen network rich in blood vessels. Having laid bare the ganglion from the fibrous sheath that bound it up, together with the facial within the Fallopian aqueduct, it was found that the first was placed simply over the second, that in colour it was very different from the latter, and that being curved, it formed a sort of network round the nerve alluded to, where it is reflected in order to enter the aqueduct. The ganglion in its superior extremity was found in immediate contact with the two roots above mentioned, under which, for the space of nearly half a line, the ganglion gave off a distinct branch, which, together with the auditory nerve, penetrated within the labyrinth, which having reached, it is probable that it, with the auditory nerve, is distributed over the membranous apparatus of the labyrinth. But what particularly rivetted my attention (continued the illustrious anatomist) was to see above this singular nervous apparatus, that, from the convexity of the ganglion, which we shall call the geniculated, and from the side of the same which looked towards the fifth pair of cerebral nerves, there issued a thick branch very analogous to the cranial vidian, which is seen in the human species, and which, without having any other connexion with the facial nerve, issued from the Fallopian aqueduct, to be lost, after a short course, in a thick fibro-cartilaginous membrane, which almost deprived me of the hope of seeing the termination of it. My investigation was, however, crowned with success, for having overcome the difficulty, I was but a short time in tracing it into a ganglion of the great sympathetic, to which it directly joined itself without sending off by the way any branches to the adjacent parts. Concerning that ganglion of the great sympathetic, I must not neglect mentioning that it gave off anteriorly a branch to the orbits, in connexion, if I mistake not, with the sixth pair of cerebral nerves, and another inferiorly, which appeared as the continuation of the cranial vidian running to the superior cervical ganglion along the great sympathetic. The geniculated ganglion, then, in its inferior extremity, is divided into three thick branches of the same reddish-gray colour, which were very apparent on the bend of the facial; but as they descended with this nerve through the aqueduct, they gradually separated, so as to form with the fibres of the communicating a very complicated network. Making an attentive examination, then, of the inferior extremity of the ganglion alluded to, Malaguti discovered a plexus of threads in intimate connexion with the communicating nerve of the face, from which plexus some branches were given off, which at different distances were lost in the facial, and one of which only he was able to trace distinctly down from the firm sheath as far as the auricular branch of the vagus, with which it formed a true anastomosis. Finally, between the auricular and the communicating, he saw directly extended a nervous filament, which he could not decide on whether it was given off from the auricular to the communicating, or *vice versa;* although, judging from the preceding anastomosis, and from the ashy colour which characterized it, he had reason to consider it to be one of a great many branches of the geniculated ganglion which united in descending with the fibres of the facial. He was enabled also to satisfy himself that the geniculated ganglion existing on the bend of the facial, sent out of the aqueduct two branches, one of which anastomosed with the common trunk formed by the union of four filaments, which arose from the superior cervical ganglion of the intercostal; whilst the other, which was more delicate, and followed a longer course, formed an anastomosis with the first branch that issued from the superior cervical ganglion, at a few lines distance from the ganglion.

From these investigations and anatomical observations, strengthened by clever arguments, and by the most profound and extensive physiological and pathological knowledge, Malaguti draws the following conclusions:—

1st. That the nervous apparatus, as seen in the calf between the portio dura and portio mollis of the seventh pair of nerves, having colour, structure, form, and distribution, altogether different from that which the collateral nerves offer, it follows, as a consequence, that it ought to be considered separate and distinct from these.

2d. That as the intercostal nerves are in communication with the seventh pair, and the intermediary is in connexion with the latter, and as the geniculated ganglion has not the characters of compound ganglions, and as it is in communication with the great sympathetic, it may lawfully be placed in the class of nerves pertaining to organic life.

3d. That as the intermediary offers a plausible explanation of the sympathy that exists between the viscera of the thorax, as well as those of the abdomen, with the organ of hearing, and with the brain, and *vice versa*, on account of the connexion which it has with the sympathetic and with the par vagum, it must therefore be considered as a branch from the intercostal continued into the brain.

4th. Finally, as the nerve of Wrisberg cannot be considered, against the opinion of Morganti, as a nerve of sensation identical to the posterior roots of the spinal nerves, it may, with more probability, be considered as a nerve of organic life, belonging directly to the most manifest centre of the nervous system.—*Dr. John Gason in Dublin Medical Press.*

IV. TREATMENT OF ANEURISM BY INJECTING A SOLUTION OF THE PERCHLORIDE OF IRON INTO THE SAC.

At a recent meeting of the London Medical Society, Mr. Gay read the following account of a case lately communicated to the Société de Chirurgie by Baron Larrey, and sent to Mr. Gay by Dr. Costello, the able author of the *Cyclopædia of Surgery*. In the month of January, Dr. Parvas, of Lyons, made known to the Academie des Sciences a new mode of effecting the coagulation of blood by mixing with it a concentrated solution of the perchloride of iron, and at the same time suggested the employment of this agent for the cure of aneurism, by injecting it into the sac. M. Delonchamps, an army surgeon at Lyons, accordingly made trial of it, and with the happiest results, as the following narrative will show:—A blacksmith, of Le Mans, aged twenty-six, met with a blow over the left eyebrow; and this was followed by an aneurism of the supra-orbital branch of the ophthalmic artery, which gradually reached the size of a pigeon's egg. Pressure on the tumour, by means of a pad and spring, was kept up for twenty-five days and nights, but without any benefit; and as the patient refused the treatment by electro-puncture, and other remedies did not appear to be very suitable to the case, M. Delonchamps determined on injecting the solution of the perchloride of iron. On the 4th of February, an oblique puncture was made through the walls of the sac, and the vessel being compressed above and below the aneurismal sac, a few drops of the concentrated solution were injected into it by means of a small glass syringe, with a fine and pointed nozzle. A few drops of blood followed the withdrawal of the instrument, but without jet. A few more drops of the solution were then injected, and it became at once evident that it had produced the desired effect, for in that portion of the sac into which the syringe had been introduced, the blood became rapidly firm, and pulsation ceased; in the remaining portion of the sac, however, no change whatever took place. This was owing to the fact, that a firm plug of coagulum had formed in the orifice of the syringe during the operation, which strong pressure on the piston could not dislodge, and had prevented the escape of a quantity of the solution sufficient to coagulate the whole of the blood within the sac. The patient suffered no pain from the operation, nor did he desist from his usual work. On the 6th February, the success having been only partial, ten or twelve drops more of the solution were injected; but, in order to prevent the formation of a plug within the syringe, as before, it was smeared with grease prior to its being used. A sharp, burning pain followed, and the fluid contents of the tumour could be felt to be undergoing the process of solidification. Not a drop of blood escaped this time on the withdrawal of the syringe, and pulsation entirely ceased. On the 7th, the patient suffered much pain, and could not sleep; the tumour also had acquired double its previous size, and felt hot and throbbing. This arose from inflammatory engorgement, which readily yielded to cold lotions, &c. so that the patient was able to resume his work again on the 8th. A slight oozing of pus through the puncture took place, and continued for seven or eight days. The tumour, after this, gradually lessened in size, and, by the 15th of March, the cure was so far advanced that its situation could scarcely be recognized. Mr. Gay expressed his opinion that the treatment above pursued was deserving of every attention from the profession. It would, however, at first, be desirable to confine its application to cases of smaller aneurism. The affinity of perchloride of iron for the fibrin of the blood is so strong that coagulation commences as soon as they come into mutual contact, and the clot is so firm that no fear need be entertained of any portion of it being washed away by the circulating current. The foregoing and other experiments that have been made, show that this agent is the most valuable styptic we possess.—*Medical Circular*, *June* 15.

MEDICAL INTELLIGENCE.

1. *Quarterly Report of State of Disease in Glasgow Royal Infirmary.*—The unusual pressure to which the several departments of the hospital were subjected during the first quarter of the year, has been greatly mitigated with the advance of summer. Ample accommodation has consequently been afforded to all applicants, while the average residence of the patients has in no instance been curtailed beyond the usually prescribed limits. In no section has the diminution in numbers been so apparent, as in the wards allotted for fever patients. During the previous quarter, the numbers admitted with contagious diseases exceeded considerably the returns of any similar period for several years preceding. The month of March alone contributed not fewer than 301 cases, of which number 49 were attended with fatal results. Happily, at this period fever reached its maximum, and we have now to record a season of somewhat rapid though steady declination. From 1st April to 20th June the number admitted amounted to 409, and, when compared with a like return for the first quarter, exhibits a decrease of 379. Cases of maculated or eruptive typhus have contributed to form, as before, the great bulk of the admissions. With the advance of more genial weather, the inflammatory complications alluded to in last report have been less frequent, and the results on the whole have been more favourable. Next in point of numbers to typhus, come instances of the mild form of pyrexia, to which the term of febricula has been attached. Judging from the disposition of this type of fever to rise and fall in numerical severity in a corresponding ratio with the progress of typhus, and bearing in mind other features of similarity, chiefly of an etiological character, which subsist between them, there appear good grounds for surmising, that a more intimate relationship exists between the two diseases than is generally conceded. About equal in number to the class just noticed, but assuming a position of far more vital interest, are the cases of small-pox. From 1st January to 20th June, 59 cases of the disease have been admitted, of which 9 have died. As evidence of the vividly contagious character of the exanthem, we regret to have to adduce the fact, that not fewer than 14 of the cases above cited contracted the disease within the establishment, 9 after recovering from attacks of typhus, and 5 while under treatment for other complaints in the medical and surgical wards. It is proper to state, for the information of those not conversant with the arrangements of the hospital, that with respect to the treatment of small-pox, the system of segregating the patients has been rigidly followed out from the commencement of the year, and the above enumeration presents the first somewhat discouraging results of the experiment. That the principle

of isolation has been attended with bad consequences to the patients themselves, is far from being proved from the limited experience with which it has been tested. Of the 59 cases, 37, a much higher proportion than is usually met with, were examples of the confluent form of the disease, while the mortality which ruled the whole was as 1 in 6½, considerably less than that of former years, the general average being 20 per cent. The two remaining types of fever, classed respectively as gastro-hepatic and typhoid, have formed but a very small proportion of the total admissions during the quarter, nor is their occurrence deserving of remark, were it not for the very small mortality recorded as attendant on the latter disease, when compared with its fatality in those countries to which it appears to be indigenous, and from which circumstance, coupled with others of a not less important character, doubts might be expressed respecting the supposed identity of the two affections.

The diminution in the number of admissions to the medical and surgical department, though not so manifest as in the case of the fever wards, has amounted to 54; the relative numbers being for the first quarter 634, and for the second 580. The larger amount of mortality in Glasgow, following on the more common classes of disease, that has been brought to light by Mr. Patrick's returns for the past five months, has also been reflected in the practice of the hospital. At no former period have the deaths been so numerous in proportion to the number of cases treated. In the course of the spring months the mortality in the medical and surgical wards averaged about 12 per cent. of the cases treated, and during the present season, it has amounted to 11 per cent., while the rate of mortality in this department during former periods, has seldom exceeded 7 per cent. It is difficult to account for the increased amount of fatality at a period when all classes have been fully employed, and during the absence of epidemic agencies, nor is it possible to trace it to any particular series of diseases, the mortality over all classes having been marked with a more than usual ratio of intensity.

Admissions to the surgical wards have been more numerous than those of the medical department, and, from the generally milder character of the diseases and injuries treated, the cases have as usual been attended with more satisfactory results. Many capital operations have been performed, chiefly of a Secondary character, the nature and issue of which we will proceed to enumerate: 3 amputations at the thigh for diseased knee joint, progressing favourably; 1 double amputation, primary, involving one leg below the knee, and the other at the ankle joint, terminating fatally in two days; 1 amputation of the leg from strumous disease of ankle, dismissed well; 2 amputations at ankle joint from caries of tarsus; of which 1 terminated fatally fourteen days after operation, in consequence of gangrene of the flap supervening; the other did well; of the upper extremity below the shoulder joint, 6 amputations have been performed, of these, 3 have been primary and 3 secondary; of the former, all have survived, while 2 of the latter have died. Lithotomy has been performed in two cases—both boys—with the best results. In each instance the operation was performed by means of the rectangular staff recommended and adopted some years ago by Dr. Andrew Buchanan, and now very generally in use in this hospital. In one case the stone was a very fine specimen of the mulberry form of calculus, weighing 84 grains, and without any alternating layer, a description of deposit that has been rarely met with for some years past in the house. In the other, the stone weighed 245 grains, and was found to be composed chiefly of the ammoniaco-magnesian phosphate, readily broken in the bladder, and of an irregularly soft consistence, from which circumstance some difficulty was experienced by the operator in its extraction. Both cases were operated upon on the same day, and were under the care of Dr. Lawrie.. The recovery of the first was exceedingly rapid, and the progress of the last, though somewhat protracted in consequence of the delicate state of the boy, and a threatening of pneumonic complication, was ultimately not less satisfactory. In addition to several operations of a less formidable character, such as excision of the elbow joint, upper jaw, os calcis, and necrosed sequestra, which presented nothing beyond the usual interest that most constantly appertains to these valuable improvements in surgery, there have been other instances during the quarter of what may be termed novelties in operation. The first case of this nature to which we will allude was one of brachial aneurism at the bend of the arm, caused by injury to the artery from venesection, and to all appearance successfully treated by means of pressure, employed through the medium of an apparatus similar to Carte's compressor, after the ordinary compress and roller had failed to prevent pulsation. The patient was dismissed well about a month since, but appeared to-day, 18th June, with symptoms of a recurrence of the arterial lesion, without now, however, being accompanied with involution of the vein. We are therefore not entitled to classify this case as yet among the cures of aneurism by compression, notwithstanding the probability that by care and attention on the part of the patient a more favourable issue was expected. The treatment of aneurism by this method appears from the records to have been attempted in the Royal Infirmary first by the late Dr. Hannay in 1845, and from that period to the present repeated trials have been given the practice by the various acting surgeons. Great difficulty, however, has been experienced in prevailing on the patients to submit to the pain and irksomeness entailed by the sustained pressure, and the consequence has been that out of six cases treated in this way four absconded, and the remaining two had the deligation of the artery afterwards performed: Since the favourable turn given to the treatment by compression by Dr. Bellingham and the Dublin school, and the introduction of improved apparatus, it is exceedingly probable that the method will be subjected to a fairer trial than it has hitherto received, and which the extreme paucity of the cases admitted suffering from this affection of late years, has also been the means of preventing. It is but just to state, that the hospital records afford one case in which popliteal aneurism was cured by means of compression, after a trial of seven days. This patient was under the surgical care of Mr. Watt about the beginning of last year, and its insertion here is more called for, seeing that it was inadvertently omitted in the Annual Report of the Hospital, besides being, as far as we know, the first successful case of the kind occurring in the west of Scotland.

Among other cases possessing features of novelty, we may mention an instance of vesico-vaginal fistula, wherein recourse was had to the application of the galvanic cautery, and the current directed on the abnormal opening by means of wires pointed with platinum foil, and arranged to fit the size and peculiarities of the fistula. In this case, which, however, was an extremely favourable one for operation, the success was such as to warrant a repetition of the practice. Continuing our epitome, we next come to a case of complete dislocation of the lower jaw of nine weeks' standing, unique and instructive in its character. This patient, who was under the care of Dr. Lawrie, had sustained a fall two months previous to his admission, which occasioned the displacement for which he sought relief. After ineffectual attempts at reduction by the ordinary means recommended in similar cases, an apparatus was constructed consisting of a double pair of strong forceps, accommodated at one end to the dental ridges, and held together by a transverse metallic band, which served the double purpose of depressing the tongue and steadying the instrument in the course of manipulation. By this means, while the patient was under the influence of chloroform, an immense amount of lever power was obtained, and was at last brought successfully to bear on the displaced jaw. At the same time, considerable counter pressure was exerted by means of a tourniquet, the screw and pad of which were fixed on the vertex, the head being protected by a metallic skull cap well padded with lint. From the large number of cases of stricture of the urethra admitted into the hospital, there are ever and anon occurring instances of an impermeable as well as of a permeable character, requiring more than the usual treatment by dilatation. During the past quarter, we have one case recorded in which urethral or rather perineal section was performed, as the stricture was behind the bulb, and the disease complicated with fistulous and urinary abscess, rendering it by no means favourable to operation. In the previous quarter a case of a somewhat analogous nature is reported, wherein a similar operation was performed. In the case first cited the introduction of an instrument was physically impossible, while in the one last mentioned the stricture was perfectly permeable, but the constitutional symptoms supervening on the introduction of a catheter, were of such a serious cast that it was rendered necessary to relieve the obstruction by operation. Both cases have been attended with the most favourable results.

In our last report we had occasion to allude to the presence of hospital gangrene in some of the surgical wards, and to notice its pernicious effects on the recoveries of the patients. We are now luckily in a position to be able to record the entire cessation of the epidemic, not, however, without producing one fatal result. The energetic means taken by the Managers, consisting in the removal and complete segregation of the infected, and after-fumigation of the wards, are the only feasible measures that can be adopted with any degree of success in attempting to uproot the evil for a season. On the other hand, for the purposes of prevention, we know no plan more effective than that of keeping the wards well aired, by having the windows constantly drawn, and retaining seasonable fires both in winter and summer. The advantages attending this very free system of ventilation, will be partially counteracted by the inflammatory complications which occasionally ensue from its adoption, but the occurrence of a few pleuritic stitches, readily succumbing to treatment, can never be put in comparison with the dire effects so liable to ensue from a single case of hospital gangrene.

2. *Glasgow Medico-Chirurgical Society.*—The second meeting of the session took place on Tuesday the 12th April. In the absence of the President, Dr. Ritchie was called to the chair. W. Lyon, Esq., read the conclusion of his paper, entitled "Reminiscences of Hernia," a part of which will be found at p. 163 of the present number.

The third meeting took place on Tuesday the 10th May. Dr. Wilson in the chair. Dr. Lawrie detailed a case of traumatic aneurism at the bend of the arm, and one of recent wound of the artery in the same situation, both successfully treated by pressure.* Also one of wound of the superficial palmar arch, in which pressure, followed by sloughing, failed, and the artery was successfully tied at the wounded point. He also detailed a case of dislocation of the lower jaw, of two months' duration, which was reduced, after all ordinary means had failed, by a compound lever acting on the last molar teeth, while the chin was forcibly raised by a tourniquet applied over the head. The lever and tourniquet were suggested and made by Mr. Hilliard, instrument-maker and cupper to the Glasgow Infirmary. At the same meeting there was exhibited an apparatus employed by Dr. Pagan, in which the galvanic current is made use of in the application of the actual cautery. In the absence of Dr. Pagan, Mr. Stark explained its nature.

The fourth meeting was held on Tuesday the 14th June. The President in the chair. Dr. Easton read a paper on "Poisoning by Aconite," which will be found among the original communications of the present number. In the discussion upon this paper, Dr. Lawrie made, in substance, the following observations:—

About half-past eight o'clock on the evening of the 8th January last, one of my dressers in the Infirmary called upon me to request my opinion on the case of one of his friends. Before proceeding farther, I must be allowed to state that the young man (Mr. W.) had been long most favourably known to me, and that of the many young men who have acted as my dressers in the Infirmary, there have been none with whose attention and general demeanour I was more fully satisfied.

Mr. W. stated to me, that Mr. B., one of his intimate friends, had called upon him that afternoon, between six and seven o'clock, complaining of headache, and that he had given him a draught composed of 20 drops of the tincture of aconite, 25 drops of the tincture of belladonna, and one drachm of the essence of musk. This, he said, had occurred in a drug establishment in which he was engaged in dispensing medicines. Being told, in answer to my enquiries, that his friend was at the door in a cab, and quite able to walk, I requested that he might be brought into my consulting room. I then, or immediately afterwards, was further told, that after swallowing the draught, Mr. B. had walked fully a mile to a friend's house, that he had there partaken of tea, bread, and fish; that he had been taken ill; had in consequence swallowed some whisky and water; had returned to Mr. W., and had been brought to me in a cab; and that no medicine had been administered as an antidote to the draught. I made most minute enquiry as to the preparation of the tincture of aconite, and the quantity given, and was once and again assured that it was

---

* In the case of traumatic aneurism, the cure by pressure has not been permanent, the pulsation having returned.

20 drops of the pharmacopœial tincture, and that (especially on the latter point) there was no mistake.

That I may not interrupt the subsequent detail of the symptoms and treatment of the case, I may be allowed to remark, that much has been said elsewhere as to the discrepancy of the above narrative and the "declaration" subsequently made by Mr. W. The discrepancy, however, is in reality not great, and can easily be explained, without in the slightest degree impugning Mr. W.'s veracity, or (I hope I may add) my accuracy. The discrepancy is threefold. 1st, It was not the tincture of the London Pharmacopœia, but Pereira's tincture which had been given. The explanation is, that Mr. W., being only a second year's student, was not aware that there is any difference between the two tinctures, and in reality the difference is so slight that they are nearly identical. 2d, He used the word "drops" instead of "minims," simply, and for the reason above stated, because he believed these terms to be synonymous. 3d, It would appear that the quantities were subsequently declared to be 20ᴍ of the tincture of belladonna and 25ᴍ of aconite. That such a transposition or misunderstanding may have very readily occurred, especially under exciting circumstances, can be easily understood. I must also be pardoned when I say, that when we bear in mind that the draught was extemporaneously mixed, over the counter of an open shop, it is still to me an undecided point which medicine is really represented by the 20 and which by the 25; and that, in so far as I am concerned, both being poisons, it is a matter of minor importance.

Mr. B., the unfortunate subject of this case, walked into my room, supported on either side by Mr. W. and the friend whom he had visited after swallowing the draught. His gait and appearance were those of an intoxicated man; but when he spoke, which he did with some effort, his articulation was so distinct, and his conversation so perfectly intelligent, that any idea of alcoholic intoxication was instantly dispelled. He complained of a general feeling of discomfort and illness, of tingling and numbness in the muscles of the face, and of dragging downwards, especially towards the left side. His face was not flushed, neither was his skin cold, although the night was cold and stormy, and his pulse was about 90 of fair strength. While I was examining him, he was seized with an inclination to vomit, whereupon I walked across the room to bring him a basin. To my surprise, on turning round with the basin in my hand, I found him by my side. The basin was replaced, and he vomited, standing with his hands resting on the basin-stand. To mark the command he had over his muscles, and the amount of muscular vigour he possessed, I must state, that by restraining the effort to vomit, and by putting his right hand over his lips, not a drop escaped from his mouth upon the floor, and that he walked across the room as quickly as I did. Observing that the matter which he discharged into the basin had the appearance of tea and bread recently swallowed, I gave him a tumbler of warm water, containing 8 or 10 grains (not more) of ipecacuan powder, for the purpose of emptying his stomach as speedily as possible. He vomited again, still standing at the basin-stand, supported by Mr. W., and did not complain of weakness or faintness. Believing, from what I have now detailed of his muscular power, that he was able to be moved, and being anxious that he should be in bed as soon as possible, I advised that he should be immediately taken home; that if his stomach were not emptied by the medicine which I had given him, a little ipecacuan wine should be exhibited, and that he should be freely stimulated.

The party then left my house, Mr. B. walking with support, as he had entered it. They expressed no wish that I should accompany or follow them, and left no name or address. On leaving, I told Mr. W., if there was no mistake as to the strength and dose of the tincture of aconite, that although his friend was in danger, I thought he would recover. I took every precaution that if I were sent for to see Mr. B. I should be easily found. In about an hour, the friend who accompanied him came for me, but did not lead me to understand that Mr. B. was materially worse, so that when I arrived at his father's house I was shocked and surprised to find that he had died a few minutes after I had been sent for.

Such is a candid statement of my knowledge of this melancholy case, in as far as it was derived from personal observation, and from details of its previous history given to me at the moment. In a medical point of view it involves many interesting considerations, and among others the following:—

The dose and its rapidly fatal effects. What was the dose? It is impossible for me to believe that a confidential statement, voluntarily made to me, no one else being present, by Mr. W., could contain a single syllable except what he conscientiously believed to be the truth; and consequently I must assume that the quantity of aconite given was either 20 or 25 minims, and the same of belladonna.

What was the strength of the tincture of aconite? It is said to have been Pereira's, made with ℥xvi, or 7,000 grains of the root to O iss or ℥xxx of spirits. Now, I must protest against any such tincture going by Pereira's name. His tincture is composed of ℥xij (or gr. 5,760) to ℥xxx of spirits, a difference of strength of some importance in a case where accuracy is so essential.

Of the numerous tinctures of aconite, (and their name is legion), it is only necessary that I allude to four for the purpose of illustration, viz. Fleming's, that of the London Pharmacopœia, Pereira's, and one which improperly passes under Pereira's name, made with ℥xvi to the lb., or by avoirdupois in place of apothecaries' weight.

The strength of these tinctures is—

	Root.	Spirit.	
Fleming's,..	℥xvj	℥xxiv,	or 1 to 1½.
London,..	℥xv,	℥xl,	or 1 to 2⅔.
Pereira's,..	℥xij,	℥xxx	or 1 to 2½.
Pereira's avoirdupois, ...	grs.7000	℥xxx,	or 1 to 2 nearly.

Of the doses and effects of these tinctures, by far the most accurate and authentic account is that given of his own tincture by Dr. Fleming, in his Treatise on Aconite. From it we learn that from 1 to 3 m. is a moderate, and from 5 to 10 m. a full dose. Of the full dose, he says "from 10 minims given at first," or from a "first dose of 5 minims, succeeded in two hours by another of equal amount," symptoms are induced which mark "the utmost extent to which I would recommend the physiological effects of the aconite to be carried, in order to obtain with safety and success its therapeutical action." (Page 22–24.) 10 minims, therefore, of Dr. Fleming's tincture are, according to its author, a full but safe medicinal dose of aconite.

Dr. Niven, in his translation of the last edition of the *London Pharmacopœia*, says that the dose of the London tincture is m. iij to m. xv, or even more. (Page 638.)

As a standard of comparison, let us assume 10 m. of Fleming's tincture as a full dose; and since

Fleming.		London.		Pereira's.		Pereira avoirdupois.
10 m.	=	17 m.	=	16½ m.	=	13½ m.

These figures, 10 m., 17 m., 16½ m., 13½ m., would represent the full dose of these tinctures respectively.

			Fleming.
Conversely —	25 m. London	=	14 m.
"	25 m. Pereira's	=	15 m.
"	25 m. Pereira's avoirdupois	=	17 m.

Let us further assume that 25 m. of the last of these was the dose administered in this case, and it will appear that the quantity given was nearly equal to m. xvij of Fleming's tincture, and consequently was vij m. of that tincture in excess of a full and safe medicinal dose. On the other hand, if we assume the dose given at xx m. the excess will be only m. iiiss.

Before discussing this point farther, it is necessary that I state that previously to the 8th January last, I had had no experience of aconite either as a medicine or a poison. I had never prescribed it myself, nor visited any patient who was using it. My opinion, therefore, must be taken "*quantum valeat*," when I say that three and a-half, or seven minims in excess of a safe dose, is a small quantity to cause death in a youth of twenty, within four hours of its exhibition. At page 49 of his treatise, Dr. Fleming says, that "two or three drachms of the root, or less than one drachm of the tincture, are sufficient to cause death." In this case barely one-third of that quantity was given. If we apply to it, what indeed may not be a very safe test, the analogy of other medicines, the fact will appear still more remarkable. One drachm is a full but safe dose of laudanum, but most of us would be greatly surprised to learn that a youth of twenty had died within four hours after swallowing double that quantity.

It has been suggested that hitherto the belladonna has been too much overlooked, and that it may have had some share in the melancholy result. This is a point which future experience must decide. If we turn to one of the authorities already quoted, (Niven, page 641), we find that he assigns from m. ij to m. iv as the medicinal dose of tincture of belladonna. From my own experience, which has been ample in regard to this medicine, I should say these are not full doses. Let us, however, assume m. x as a full dose, and the excess in this case will be m. x, or xv, a quantity of an acknowledged poison not to be disregarded. Although it may with truth be affirmed, that the more prominent symptoms were those caused by aconite, and not by belladonna, the question still remains, might not the addition of belladonna aggravate these symptoms, and accelerate their progress?

Of the treatment adopted in this case, it does not become me to say much. In common, I believe, with every medical man in this city, having had no experience to guide me, I must turn to the authority of those whose opportunities have been extensive. Dr. Fleming says, "Provided vomiting to a sufficient extent has not already been excited, as an effect of the poison itself, an emetic must at once be administered." (Page 52.) "In order to combat the remote effects of the poison * * * a stimulant line of treatment must be rigidly enforced." (Page 53.) Seeing that the patient vomited in my presence a portion of his last meal, (I was not made aware, so far as I can recollect, of any previous vomiting), I deemed it right "at once" to assist the stomach in throwing off its contents, by a few grains of ipecacuan and a draught of warm water. To pronounce that in so doing I did wrong, with all deference, appears to me calculated to cast a doubt on the best of all remedies, in cases of poisoning, and to induce hesitation in the adoption of those means, on which the safety of our patients must in general depend. To say that it was too late at the end of two hours, is almost tantamount to declaring that emetics can never be available. How often can it happen, especially in country practice, that a medical man has an opportunity of giving emetics or any other remedies at an earlier period? Did time permit, I could, in corroboration of the propriety of the measures which I recommended, detail the case of a youth to whom I was summoned two mornings ago, who had swallowed three grains of strychnine, who was not seen for four hours by any-medical man, and to whom after five hours an emetic was given with the very happiest result. In no case is early and free vomiting of greater importance than in poisoning by aconite. Almost all the cases of recovery from poisoning, or poisonous doses, detailed in Dr. Fleming's treatise, appear to have been benefitted, if not saved, by emetics and vomiting. Among others, case 1, page 152, Emetics, castor oil, alcoholic stimulants—recovery. Case 2, page 153, A woman swallowed a mouthful of the tincture of the root. The symptoms set in in five minutes. "In about two hours the eyes were fixed and protruded, the pupils contracted, countenance livid, jaws and fauces rigid, extremities cold and pulseless, breathing imperfect and laborious, and the action of the heart quick and fluttering." An emetic, a large draught of warm water, and "an occasional dose of ammonia" were given—recovery. Case 5, page 156, Vomiting, with considerable relief. Case 6, page 157, Ipecacuan wine given to increase the vomiting—stimulants. Recovery. Case 7, page 157, Emetics and stimulants—recovery. Case 9, page 159, Ipecacuan wine to increase the vomiting—recovery.

From some experiments which I made on dogs with the identical tincture given in Mr. B.'s case, I found that a half-starved middle-sized terrier will take one drachm with safety, if he is allowed to vomit. He slavers, falls upon his side, can hardly drag the lower half of his body, vomits, and next day is ready for another dose.

That my prognosis was at fault the result too plainly shows, but, with all deference, I do not think that it *proves* that it was ill founded. It must be admitted on all hands that 20 or 25 drops of the London or Pereira's tincture of aconite is not a poisonous dose. I had, therefore, no reason to anticipate from the quantity given, severe vomiting, death, and still less a rapidly fatal result.

It may be asked, Did not the symptoms indicate approaching death? Not being able to speak from experience, I must again refer to authorities. Dr. Christison, in his *Dispensatory*, (p. 56,) says—"The larger medicinal doses excite nausea, numbness, and tingling in the lips and cheeks, or even over the chest, and other parts of the body, diminution of the force and frequency of the pulse, which sometimes sinks to 40, great muscular weakness, and confusion and dimness of sight. If the doses be diminished when these effects arise, and stimulants given when they increase, there is no reason for alarm." Of the same doses, Dr. Fleming says,—"Great muscular debility is now experienced, and giddiness, with confusion of sight, comes on when the erect posture is assumed. The individual sinks into a lethargic condition, evinces great disinclination to be disturbed, although he rarely falls asleep, and complains much of chilliness, particularly in the extremities, which are cold to the touch. These phenomena continue in their full intensity from three to five hours, when they gradually disappear, a sensation of languor which lasts for several hours more alone remaining." (P. 23.) When I compare these statements, as to the legitimate effects of medicinal doses, with the symptoms which I observed in Mr. B., and when I add to them the extreme prostration from which persons who had swallowed poisonous doses have recovered, (v. case 2d above quoted,) I cannot admit that the opinion which I gave, as to the probable result, was not founded on correct data.

In conclusion, I beg heartily to concur in all that can be said of the painful uncertainty which attends not only prescribing, but dispensing medicine. The differences of strength which exist in the formulæ of the London, Edinburgh, and Dublin pharmacopœias are disgraceful to our three colleges of physicians. To take one instance only: the solution of the acetate of morphia of London is double the strength of that of Dublin, while in Edinburgh there is no such authorized formula. The solution of the muriate of morphia is different in all the three, and that of London is double the strength of Edinburgh. How absurd, nay how criminal, is this! Why should not all solutions of so potent, and so common a medicine, be of the same strength? A prescription written in Edinburgh to-day may be made up in London to-morrow, or in Dublin the day following, and with results, arising from difference of formula alone, which may at times be all but fatal.

The weights employed by the colleges are not the same—London and Edinburgh use troy weight, and Dublin avoirdupois. The consequence is, as happened in this case, that a tincture which ought to be prepared from 5,670 grains of root, may be made with 7,000 grains. The greatest uncertainty prevails, even in our best employed drug establishments, as to what is the equivalent in grains of one pound. (℔j.) Some read it grs. 5,760, others 7,000, and others again 7,680. As applied to liquids, the words pound and pint seem to some ears to convey even a less definite meaning, some understanding ʒxij, others ʒxvj, and others again, ℥xx. In this, however, the colleges are not to blame, as their pharmacopœias contain very explicit statements as to the weights and measures employed, and their equivalents.

Let us hope that good will come out of evil, and that we shall all benefit by the melancholy lesson that has been taught us. Our chemists and druggists have a right to expect, that prescriptions given in Scotland shall correspond with the Edinburgh pharmacopœia, and that when that pharmacopœia does not contain the formula ordered, the one that is desired shall be specified. At the same time, is there not reason to fear that, from the recent changes which have been made in the London pharmacopœia and other causes, intended accuracy may lead to confusion? To prevent this, as far as possible, I would strongly recommend all our drug establishments immediately to provide themselves with Squire's Translation of the *New London Pharmacopœia*, an unpretending but most useful work, a copy of which ought to lie on the table of every one who writes, and on the counter of every one who prepares prescriptions.

3. *Medical Ethics.*—We observe from a little publication on our table, that the Glasgow Southern Medical Society has adopted, with some alterations and additions, the code of ethics of the American Medical Association—the code of that body being little other than a reprint of the original code compiled by the late Dr. Percival of Manchester. Such a collection of maxims and regulations, in so far as it is merely

an embodiment of the sentiments and practice of honourable men, must, we think, at once commend itself to every right-minded member of the profession; and it may possibly be further useful in correcting and confirming the imperfect or vague notions of some others. But we doubt much whether in its present form, and at the present time, the code of ethics before us will have any considerable influence upon the conduct of those for whom we presume such a work is specially designed, those who seem, not to themselves but to their neighbours, to stand in need of such guidance.

While we refrain, therefore, from expressing an unfavourable opinion of what we cannot but regard as a very important step in the right direction, we must equally guard against altogether approving of what, professing to embrace an entire subject of an interesting character to every member of the medical profession in the city, whether or not he belong to the Southern Society, leaves many of its details in such a heap of confusion as can engender nothing but jealousy among honest men, while another class may gather from it substantial advantages.

4. *Monument to Dr. Orfila.*—From a supplement of the *Medical Herald of Madrid*, of 2d June, it appears that through the exertions of its young and spirited director, a subscription is going on throughout Spain, and especially in the capital, for the erection of a monument in memory of the late Dr. Orfila, who recently died in Paris. The gentlemen of the press in Madrid, medical, political, and scientific, are moving in the work, as well as various medical incorporations. It also appears that Sênor Orfila, deputy to the Cortes, and brother to the deceased distinguished physician, is to act as treasurer, and in the event of the fund subscribed not defraying all the cost of the monument, the honourable gentleman will pay the sum that may be deficient.

BOOKS RECEIVED.

Homœopathy: its Tenets and Tendencies, Theoretical, Theological and Therapeutical. By James Y. Simpson, M.D., Edinburgh, 1853.
The Modern Advancement of Practical Medicine and Surgery. By J. Y. Simpson, M.D., Edinburgh, 1853.
The Sophistry of Empiricism. London: Churchill, 1853.
On Diseases of Women and Ovarian Inflammation. By Edward John Tilt, M.D. Second Edition. London: Churchill, 1853.
Remarks on Hysteria in Connexion with Hydrophobia and other Convulsive Affections. By John Dalziel, M.D., 1853.
Modern Domestic Medicine; a Popular Treatise, Describing the Symptoms, Causes, and Treatment of the Diseases Incident to the Human Frame. By Thomas J. Graham, M.D. Eleventh Edition. London, 1853.
On the Anæsthetic Properties of the Lycoperdon Proteus, or Common Puff-Ball. By B. W. Richardson. Reprinted from the Association Medical Journal. London, 1853.
Chemistry. Tables Introductory to a Course of Testing in Qualitative and Quantitative Analysis. By John Macadam, Lecturer on Chemistry.
Paris Médical Vade-mecum des Médecins Etrangers. Par le Dr. Henri Meding. Tomes ii. Paris: Bailliere, 1852.
Medical Circular. Weekly. (In exchange.)
Edinburgh Monthly Journal of Medical Science. (In exchange.)
The Association Medical Journal. Weekly since January. (In exchange.)
The Journal of Psychological Medicine for April, 1853. (In exchange.)
The Dublin Medical Press. Weekly. (In exchange.)
The Dublin Quarterly Journal of Medical Sciences, May, 1853. (In exchange.)
The American Journal of Medical Sciences, April, 1853.
The New Orleans Monthly Medical Register, April, 1853.
The Southern Journal of the Medical and Physical Sciences. Nashville, Tenn., May, 1853.
Supplemento Al Num. 31 de El Heraldo Médico. Madrid, 2 de Junio, de 1853.
Thirty-Ninth Annual Report of the Glasgow Royal Lunatic Asylum. 1853.
Thirteenth Annual Report of the Crichton Royal Institution for Lunatics. 1852.
Forty-First Annual Report of the Old Man's Friend Society. Glasgow, 1853.

BELL AND BAIN, PRINTERS, GLASGOW.

THE

GLASGOW MEDICAL JOURNAL.

VOL. I.] OCTOBER, 1853. [NO. 3.

ORIGINAL COMMUNICATIONS.

I. *Notes on the Transportability of Yellow Fever, or Black Vomit.* By D. JAIME ARDEVOL, Doctor in Medicine, Member of the Academy of Practical Medicine of Barcelona, Cordova, and of various other Academies, Physician in charge of the Lazaretto during the Epidemic which prevailed in Gibraltar in 1828. Translated from the Spanish, with Notes, by MATHIE HAMILTON, M.D., formerly Surgeon to the London, Potosi, and Peruvian Mining Company, &c.

THE following pages contain a translation of a chapter of Dr. Ardevol's elaborate and interesting work on yellow fever, a disease which during a long period has been a theme for much bitter controversy, both in this and in other lands; and which at present is exciting attention, especially in the south of England, in consequence of what has lately occurred in various steam vessels during voyages from the tropics to the English coast. Those writers and others, who strenuously maintain that yellow fever cannot attack people in Britain, nor be evolved epidemically in England, should know and reflect on the extraordinary fact, that within these last few years yellow fever has appeared and caused terrible destruction of life, both in vessels and on land, in various localities on the south-east coast of America, both within and beyond the tropics, in places where it never was seen before since Europeans were first domiciled there, more than three centuries ago. In 1826, when I was in Brazil, at the island of St. Catherine, the people there, and also at Rio Janiero, would have laughed at a proposal to adopt precautionary means against the importation of yellow fever from the coast of Africa or any other quarter, in steam vessels; but now, and within these last few years, the black vomit* has made sad havoc along the Brazilian coast, at various localities, between the equator and the Great River Plate, as, according to late intelligence, the disease had latterly appeared in the roadsteads of Buenos Ayres.

---

* Dr. Ardevol in his work uses the terms black vomit and yellow fever as the same.

If, as is the opinion of some writers on yellow fever, all that is necessary for the formation of an epidemic focus be a sufficiently hot atmosphere, to receive the imponderable virus of black vomit; and if it be transportable, as is asserted in the following paragraphs, then even London, with its two millions and a-half of inhabitants, may be subjected to the black vomit, now since steam navigation is approximating, as it were, England to the West Indies.

In the year 1825, a degree of solar heat was experienced in London which I seldom saw equalled during a residence of many years in a tropical climate, so that in the month of June the heat of the atmosphere in the city, at 3 P.M. was not less than 94 degrees in the shade, as indicated by a thermometer (Fahrenheit's) which was in the open air, under the archway which led into the (then) Royal Exchange from Cornhill. That intense heat was not ephemeral, for during ten days consecutively I noted said thermometer, and observed that the heat of that atmosphere did not vary one degree all these days at the hour noted, while scarcely a breath of wind was felt during said period. What has happened before in London and elsewhere, as to a hot atmosphere, may recur; and if some of the following statements are well founded, yellow fever may appear epidemically even on English ground. Therefore, it will be incumbent on the government to take care that vessels notoriously infected with black vomit, when arriving in British ports, should be allowed neither to land passengers nor discharge cargo, without the previous consideration and permission of local authorities. It may be said, that is the law in England at present; well, let it remain so; no more is wanted. But judging from certain recent epistles which have been issued from the press, it appears that there are influential individuals who would remove every check in the form of quarantine regulations, which, in my humble opinion, would in no small degree be imprudent; for though *cold air destroys* the germ of yellow fever, yet in circumstances such as those already referred to, it is possible that, like an unwelcome and unexpected visitor, black vomit might appear among us, and convince the most sceptical that even in matters relating to Hygeia, discretion is the better half of valour.

146. In 1804 the yellow fever afflicted Cadiz, it appearing there after a Spanish vessel, the Ana, anchored in that port; it having been permitted to do so with more greed than discretion; also a few days subsequent to its arrival at Liorna, and landing of the crew, the fever attacked the population.

147. In the same year and season, while that epidemic was in Cadiz, a quantity of money was sent from that city, escorted by

a party of cavalry; and on their arrival in the town of Barrios, which is 18 leagues from Cadiz, one of the soldiers was attacked by the black vomit, and infected persons in that place.*

148. In that year the fever was conveyed from Cadiz to the town of Jimena, by Antonio Montero, who fell sick with yellow fever on the day after his arrival in Jimena, and communicated that disease to the population.

149. In 1740 the black vomit appeared, for the first time, in Guayaquil; it having been conveyed there from Panama, by Spanish galleons (treasure ships), which were ordered to the former place to have the specie sent to the mountains, to save it from being captured by the English, during the war of that period.†

150. The brig Grand Turk, of Barcelona, arrived there from Havana about the end of June, 1821. In its voyage home there were four deaths on board, and almost the whole crew were sick. There also arrived at that time the Libertad, from Havana, which vessel had taken to the latter port, from the cost of Guinea, 800 slaves. These vessels, and others from the Havana, were admitted to discharge in Barcelona, and for the first time the black vomit was developed epidemically in that city. The first persons who suffered there were strangers, who had not been acclimatized, and among them the crew of a Neapolitan vessel of war, Conception, who engaged themselves to clean the Grand Turk, they being anchored alongside of that brig. Also the caulkers from the port working on said vessel contracted the disease. At that period I was there officially employed.

151–2. The Swedish vessel Dygden sailed from Havana for Gibraltar in May, 1828, and during the voyage the major part of her crew were sick. On the 27th of May a seaman died, and another on the 1st of June, yet the vessel was allowed to be discharged, and her people to traffic.

The Dygden had her first communication with the town on the 6th of August, and between the 10th and 12th the two first sufferers in that epidemic became sick. They were young men, brothers, sons of Feni Malta, whose family lived in the 24th district, one of the most elevated points occupied by the population in Gibraltar. These two youths went on board the Dygden to sell cigars to the crew, with whom they were below, eating and drinking; they both died, one on the 17th, the other on the 20th. During their illness, M. Hug, Adjutant of the Hospital, put a guard on the door of the house, to prevent intercourse; but Maria Bagnes, evading the sentinel, escaped from the house of Feni Malta, taking with her a mattress or quilt, which had served the sons of Feni, and went to live with her protector in the great house of Danino. Immediately after her arrival there she fell sick, and quickly died of black vomit, communicating that disease to the families in that great house, from which thirty corpses were taken to the cemetery.*

---

* Treatise on the Epidemic of Barrios, by Dr. Don Tadeo de la Fuente.

† Don Jorge Juan and Don Antonio Ulloa.

153. When black vomit is developed in any part of our hemisphere, the persons who first are affected with the disease, natives or strangers, are always those who have had familiarity or intercourse with the persons, clothes, atmosphere, or who have been occupied in cleansing or repairing such vessels; as was seen at Barcelona in 1821, Passages in 1823, and at Gibraltar in 1828.

154. The disease is first exhibited in that locality among the population, where those persons and families dwell who have had communication with the people on board such vessels, washing the clothes, or in charge of the sick.

155. In its first development, the black vomit passes slowly from one individual to another in the same family; from one neighbour it leaps to another in the same district. Within the first fifteen days of its existence it is extended without continuity, as it were, and by unseen communications, throughout a vast population. Soon after, it is unfolded epidemically, bursting forth like a volcano, dissipating the population, destroying persons, and exterminating families; and disappearing from a want of elements to destroy. In these sad circumstances, the season has been advancing until the cold is such as to annihilate the germs of the disease. In fine, in whatever parts of the temperate zones the yellow fever may be developed, the authorities, while not forgetting that *cold kills* it, should endeavour to enforce cleanliness and ventilation.

156. A disease which transmits itself from one individual in a family to another; which from one neighbour leaps to another neighbour; that by one person of a town is transported to another city; which by the same conductor passes from one district to other territories, from one hemisphere to another region; which is always evolved in the same mode, career, symptoms, crisis, and consequences; and which, in spite of its shifting and long passage, is ever presented identically the same, even in opposite localities; it being unfolded the same in Martinique as in Siam; in the Mississippi the same as on the coast of Senegal and Bahia; in Santo Domingo it is equal to that on the coast of Guinea; and that of Honduras, Guaira, and Philadelphia, is identical with that at Sierra Leon. Transported to Guayaquil in Peru, it is like that in Panama; the same when it passes from the West Indies, at Boston, Charlestown, and New York; from Vera Cruz and Havana, at Malaga, Cadiz, Liorna, Barcelona, and Gibraltar; which in its passage through immense distances, and the revolu-

---

* That the ship Dygden was the source whence the yellow fever was conveyed to Gibraltar in 1828, was questioned and denied at that time by some of those gentlemen who investigated circumstances there.—Vide Edinburgh Review for July, 1853, page 207.

tions of ages, loses neither the entity of its type, nor its communicability; producing always the same identical disease; such a malady may be called contagious.

157. Physicians of other countries in Europe have not had such opportunities for observing yellow fever as medical men on the coasts of Spain, who generally are of opinion that it is a contagious disease.

158. If in saying that the black vomit is contagious, Spanish physicians are told that they are singular in opinion, I answer that physicians of much celebrity, and of various countries, hold the same opinion; such as the illustrious Drs. Mitchell, Chisholm, Wight, Lining, Currie, Pugnet, Makittrick, Caillot, Moreau de Jones, Pym, Bally, Francois, Pariset, Berthe, Kerandren, Macgregor, Fallows, Seteward, Gordon, Saint-Croix, Blane, Palloni, Arejula, and others.

159. Dr. Palloni says, that the first accurate description of yellow fever was that by Dr. Mitchell of Virginia, in 1744, and then that by Dr. Lining of Charlestown, who wrote on the epidemics which appeared in those states till the close of the year 1748. Both called it contagious, and considered that it was imported from the West Indies. If the opinion of distinguished physicians, Americans and Europeans, will not soften nor change the opinion of those who maintain that the black vomit is not a contagious and transportable disease, I will present many notorious cases of transportability, as they occurred in Spain; and if the Spanish physicians, who were able attentively to observe that fever in its development, career, crisis, and communications, are held as unfit to form a competent opinion on the subject, attend to the following facts, as reported by English, Italian, and French physicians.

160. In 1795, two English vessels of war, the Thetis and Husar, when off the American coast, captured two French privateers from Guadaloupe. The yellow fever afflicted one of these privateers, when fourteen men from the Husar took possession of the vessel; nine of the English sailors died before it reached Halifax, and the rest were sent to the hospital. A portion of the privateer's men were taken on board the Husar, and the Frenchmen conveyed the fever to the English ship—one-third of her crew dying of it.* This fact proves the infectious nature of that disease.†

161. The Spanish vessel of Captain D. S. Llamosi, proceeded from Cadiz, where yellow fever prevailed, and anchored in the port of Liorna, in 1804. At that time Liorna became infected, and in that city a man died of the fever, whose son was a health officer on board another ship, which contumaciously was anchored much farther from the shore than it should have been by the

---

* Legallois, Recherches sur la Contagion de la Fièvre jaune.

† Elements of Medical Logic, by Gilbert Blane. London: 1819.

harbour regulations; said health officer had not communicated with Liorna when he received on board his father's clothes, who had just expired in Liorna of yellow fever, and, without reflection, having clothed himself with them, he within three days became sick with the malady, and quickly died. What will the anti-contagionists say to this? says Palloni.*

162. In 1808, yellow fever raged in Martinique, when the French brig Palinuro anchored there, and soon after the contagion invaded the crew of that vessel. The governor of the island ordered the brig to sea; and while in those seas, it fell in with and captured the English brig Carnation, which was proceeding from Europe. The greater part of the English crew were put on board the French vessel, and all these Englishmen were attacked by the fever.

163. It is written, that an arrival from Havana brought the yellow fever to Philadelphia in the year 1762.

164. The epidemic which so sadly afflicted Philadelphia in 1793, began in Water-Street, in which was a tavern frequented by the sailors of a French privateer, whose crew brought the fever from the Windward Islands. From that street the fever was spread throughout all parts of the city.

165. Dr. Navarete says, that the epidemic of 1730–1, was brought to Cadiz by an American barque.†

166. The medical history of Spain of these latter times, presents a thousand cases, which prove the contagious nature and transportability of the black vomit. To give the lustre which is due to medical history, and in part to satisfy those curious persons who seek the truth in good faith, I will adduce some cases which, within these late years, have occurred in the Peninsula.

167. In 1800, Antonio Groso, carpenter, was employed in repairing the Delphin, American. He fell sick, and conveyed the yellow fever into his family, the Delphin having come from Havana, and had three deaths, and nearly all her crew affected with the disease.

168. In 1800, some muleteers proceeding from Cadiz, transported the yellow fever to Espera, infecting people in the taverns where they lodged.

169. A Genoese from Cadiz, in 1800, conveyed the yellow fever to Port Santa Maria, infecting all who lived in the house with him, the contagion passing to other families in that vicinity.

170. In the same year, Jose Brabo, and others from Cadiz, transported yellow fever to Rota.

171. In that year a clergyman from Cadiz carried the contagion of yellow fever to Ubrique, and infected the surgeon of that town and all his family.

---

* "*Cosa a cio di concludente gli advocati del non-contagio?*"—Palloni.

† Villalba, "Epidemologia."

172. In 1800, the yellow fever was conveyed to Moron by a party of oil merchants, from the Bay of Cadiz, who infected their families.

173. A shoemaker from Cadiz conveyed thence the yellow fever to Medina Sidonia, and infected D. S. Ortiz, who infected his parents and others of the family.

174. A sergeant, with his wife, and a soldier from Cadiz, imported the yellow fever to the port of Santa Maria, in 1804.

175. John of Cordova, a muleteer from Malaga, arrived at Espejo with his mules on 27th August, 1804, fell sick with yellow fever on his arrival there, and infected a portion of that population.

176. Alonso Nieto, from Malaga, arrived in the town of Rambla on 22d of August, 1804, and gave the yellow fever to Alonso Castro and others there.

177. In 1804, two persons from Malaga, where yellow fever prevailed, transported it to Ronda, and infected Maria del Rio, with whom they lodged; also Don B. Rubis and Don F. Ruiz, both from Malaga, arrived at that time at Ronda, and falling ill with yellow fever on their arrival, infected their servant, and through him, others in the town.

178. An individual from Malaga in 1804, carried yellow fever to Jerez de la Frontera.

179. C. Benavente, with two neighbours of Rota, proceeding from Cadiz, conveyed yellow fever to Rota in 1804.

180. In 1804, Juan Ruiz, cavalry soldier, transported yellow fever to the town of Barrios.

181. The yellow fever being in Gibraltar in 1804, some smugglers from that place conveyed the disease to the city of Algeciras. Those smugglers perished there, and part of their families.

182. From Algeciras it was transported to San Roque, by Pedro Anglada, clerk of the register, who went to visit his son who was sick with the epidemic in Algeciras. The father was attacked immediately on his return, and infected five other persons in his house.

183. The yellow fever was imported to the town of Jamina from Cadiz in 1804, by Antonio Montero, who fell sick on the day following that of his arrival from Cadiz. Montero communicated the fever to his neighbours, and through them it spread to the most elevated district of the town.

184. In 1804, a party of soldiers brought the yellow fever to Espera: the major part of these soldiers died in the houses where they lodged.

185. In 1804, yellow fever was transported from Malaga to Gibraltar, according to the relation of trustworthy inhabitants of that place; and same year it was taken from Gibraltar to Aya-

monte by a fisherman, who had exchanged some fish for goods obtained in Gibraltar.*

186. During the war with Napoleon in 1811, Murcia suffered from yellow fever, and thence it was conveyed to Jumilla, by two persons emigrated from Murcia.

187. In 1812, it was transported to Jumilla by a captain of the regiment of Almansa, from Satana, where the disease prevailed.

188. In 1813, two persons from Cadiz, in which city yellow fever was at that time, carried it to Port Santa Maria.

189. In 1819, it was introduced into San Fernando, with goods brought in an American vessel. The individuals who introduced it lived in the district of Christ.

190. In the same year, one who went to San Fernando to attend his son who was ill with the fever, conveyed it from that city to Port Santa Maria.

191. In that year, 1819, Francisco Azencio, going from San Fernando, imported the yellow fever to San Lucar de Barrameda; the said Azencio infected his grandmother, and a lad who attended him.

192. Also in 1819, from San Fernando, the yellow fever was conveyed to Jerez by three individuals, one of them being already sick, they giving the fever to two soldiers who lodged in the same house.

193. In 1819, a captain of the regiment of America took the disease to Rota; from the captain it passed to his two attendants, and from them to various other persons.

194. In 1820, the yellow fever was developed in Cadiz, and in that year it was imported into the port of Santa Maria, by people from Jerez, where the epidemic prevailed.

195. A youth from Port Santa Maria transported the malady to San Lucar de Barrameda, he falling sick there on the day of his arrival.

196. In 1820, D. Rodrigo Morales and others from Port Santa Maria, conveyed yellow fever to Lebrija, where they infected the servants of the tavern in which they lodged.

197. In 1821, the yellow fever was imported into Barcelona from Havana, by the brig Grand Turk, the Libertad, and other vessels. The Libertad was a French slave ship, and had arrived from the coast of Guinea at Havana, landing there 800 negroes; said vessel was sold very cheap by the slave captain to D. Jayme Sendra, who, two days after buying it, sailed for Barcelona. On arrival, it was sent to the lazaretto of Mahon, and as many as there entered the vessel, and respired its atmosphere, went forth from it smitten with death. However, it ought to be observed, that the crew and passengers remained in it in health, they being acclimated. The first who were attacked in that epidemic of

---

* Dr. Flores, proto-Medico, by commission for the epidemic in Ayamonte, reported to M. Paraset.

Barcelona, were those who, on the arrival of these vessels, went on board and breathed their atmospheres; these were both strangers and Spaniards, Neapolitan seamen, and the caulkers, &c. of the Grand Turk, &c.

198. In 1821, it was transported from Barcelona to Tortosa by S. Curto, soapmaker, who had communications with caulkers in the former mentioned place, who died among the first in that visitation. Curto, on his arrival in Tortosa, fell ill, and infected his assistants, through whom it was communicated to the city.

199. In 1821, it was transported from Tortosa to the town of Asco, by a servant of D. Jose Salvador. This gentleman had left Tortosa to escape from the epidemic. The servant retained, during many days, the germs of the disease, but it was there developed in his person, and the contagion conveyed to the population of Asco.

200. In 1821, one who escaped from Tortosa transported the disease to Mequinemza, which town is between the confluence of the rivers Ebro and the Segre, forty leagues, or 120 miles from the sea.

201. Vessels which in April and May, 1821, sailed from Havana for Barcelona and Malaga, carried with them the present of yellow fever. Some of these ships transported it to the lazaretto of Mahon. These communicated the fever to an English polacre, and thirty-eight other vessels. It was also introduced into the lazaretto, where died the first judge and his assistant, and the chaplain. The contagion was finally extinguished within the lazaretto, without being communicated to the population of the port.

202. In 1821, the fever was transported from Malaga to the minor garrisons which Spain possessed on the coast of Africa.

203. In the same year it was conveyed to the Isle of Pomegue, in Marsella, by the Danish brig Nicolino, which had been driven away from Malaga, because there were people on board with yellow fever. After the arrival of the Nicolino at Pomegue, it is said that the disease passed to two vessels there.

204. In 1821, it was brought to Rota by a trader from Port Santa Maria.

205. On 20th September, 1821, it was transported by a man from said Port Santa Maria to Jerez; he infected his brother, they both died, and from them the contagion passed to others.

206. In 1823, it was developed in Passages, brought from the Havana by the brig Donasterra.

207. Though the medical history of Spain presented no other case than that of Barrios, it would prove the transportability of the yellow fever, and also that the germs of the disease may remain some time in the system in incubation. Here we have a party of cavalry marching from Cadiz, where the yellow fever was raging, and at the end of three days' march, they having

gone over fifty-four miles of road, Juan Ruiz falling sick of the distemper, and infecting the hitherto healthy town of Barrios.

208. Though the black vomit may be an endemic fever in parts within the tropics, yet for its active development and disappearance, it seems to be regulated by what is observed on our coasts, by our greater or less approximation to the sun, so that it vanishes during our winter, and generally diminishes in the Havana, &c. while it is renovated there in the summer season, when our hemisphere reverberates energetically the sun's rays.

209. It is worthy the notice of a practical observer, the correlation exhibited by that fever in these latitudes, since in our climate on the coasts of Spain, it is developed only in the summer season, and disappears on the approach of winter, when mucous affections again predominate.

210. The practitioner should not forget, that the black vomit in the torrid zone follows a relation corresponding to that in the temperate; for it is evolved more or less powerfully in those places marked for its being endemic, in proportion to the focus of endemicity, as presented by our globe in its nutation, is oblique, or fronting more directly to the sun's disc.*

211. There may be various imponderable agents which concur in elevating the virulent exhalation which causes the black vomit. To our senses are presented the concourse of a marine exhalation, with the excessive heat and brilliant light of the sun. We are still ignorant of the influence of varying combinations of electricity with heat.

212. The concurrence of those three agents are presented where germinates naturally the endemicity of black vomit. The hurtful effect of said virulent agent ceases or is diminished, when our bodies are less exposed to brilliant light, and excessive heat of the sun.

213. This, in my opinion, is a convincing proof that the black vomit is a fever exotic of the temperate zone, and of origin intertropical. In the southern position of the Spanish Peninsula, I see why it is so easily developed on the coasts of Spain, and not so on those of England. It is a disease which lays prostrate the sons of the white race, who, going forth from temperate climes, establish themselves near the level of the sea, in localities where yellow fever is endemic.

214. The European, soon after his arrival at such places within the tropics where the black vomit is endemic, contracts that disease, and so does the native, who, being acclimated to a greater altitude, comes to reside on lower ground near the sea coast.

215. In many parts on the coasts of the Atlantic intertropical, the black vomit appears spontaneously, or attacks the person

---

* Dr. Ardevol affirms that yellow fever is a disease which is different in its origin, symptoms, and career, from the bilious remittent fever which often prevails on the coasts of Spain in the Mediterranean.

when the slightest cold or indisposition is experienced. In Havana, Europeans recently arrived there, and not acclimated, are judiciously prohibited from having familiarities, or coming in contact with, parties who are suffering under yellow fever.

216. It is the common opinion in Havana, and also in Europe, that those persons who have recently arrived in a tropical region, ought to abstain from eating fruits, since those of such a climate, it is said, cause indigestion, and predispose the system for yellow fever, especially such as the guayaba, chirrimoya, mango, the coco, pine-apples, &c.

217. The European, when first located within the torrid zone, and near the sea level, arrives with the system replete with fibrinous blood. The first effect of a hot climate is to rarefy the body and augment the volume of blood, visibly modifying the organism generally, and in particular the organic centre of circulation, causing directly greater action in the cutaneous apparatus, and increased lassitude in the muscular system. The exhalations produced by the heat of the climate, favour the more easy inhibition of the virulent molecules, by rarefication of the textures, and greater opening of the pores, presented in the living economy.

218. When the yellow fever is developed in any part of Europe, or of the temperate zone, in that part it prevails epidemically, and attacks its victims without any precursory symptoms.

219. I have said that yellow fever may supervene on the slightest cold. At the beginning, if the fever is not strong, it may appear as only a slight indisposition; and as it is a disease so rapid and short, if it terminates within its natural period, it may pass without notice or suspicion, nor leave any sign of disease. In such a case, the patient remains cool and contented, and the physicians and assistants may be in doubt as to the nature of the disease. But if the fever remains unknown in its elemental period, and passes into the second stage of its career, then unforeseen grief to families and individuals is often the result of a fatal termination of the case. All this I have seen both in the Havana and Gibraltar, which resulted from yellow fever being so little understood, or almost entirely unknown in its elemental period.

220. Persons have lived in infected atmospheres, and slept in the same apartments with patients under yellow fever, who remained healthy during one or two months, and latterly were attacked with that malady. Others have passed through an epidemic, while exposed to infection, without any bad result, and in a subsequent epidemic they succumbed to the disease. Others, again, have visited infected rooms, who, on coming out, said they felt unwell, and were attacked with the fever. Many there are who go away from infected places apparently safe and sound, but carrying with them imbibed in their textures the germs of the black vomit. Some have had familiarities and communications with infected persons and atmospheres, who, when removed to a

pure air and among healthy people, after passing fifteen days or a month, at last have been subjected to the vomit. Such cases have come under my observation and reflection, and they prove that the germs of that disease may remain in the system during many days.

221. The evolvement of that fever, rapid and sudden in some cases, slow and more tardy in others, may proceed from habit of body, or the circumstances in which the person is placed, or from the greater or less permeability of his textures, by which the subtile virus may penetrate, or from the atmosphere being more densely charged with infection.

222. There are atmospheres which emit a peculiar smell, as it were of infection, which I cannot endure without repugnance, and a desire to remove from such effluvia. I have noticed that the imbibition of that virus absorbed by those who have been exposed to air so loaded, is naturally virulent and mortal in its effects. Those who are infected in such an atmosphere are seriously ill, and generally the result is fatal. How is that virulent germ most frequently imbibed? Is it by contact with the sick or their clothes, or is that germ in a state of subtile solution in an atmosphere saturated and circumscribed? I believe that the infection may be conveyed by all these modes, but the most certain and frequent is the infected atmosphere.

223. Through what medium is the virus conveyed into the system? Is it by the cutaneous vessels, the mucous membranes, the veins, the air passages, or is it through the nerves, or by what apparatus or textures? I see the effects of an absorption, but to me the medium is an *arcanum* which I cannot penetrate.

224. If the imbibition is effected by means of percolation, as it were through the epidermis, I do not perceive that it leaves any alteration on the cuticle, neither have heard any complaint of that organ from the living man, nor do I observe alteration in the dead.

225. The same may be said of the mucous membranes; on them is not seen any effects of the seat of that virus, nor of its consequences.

226. We do not observe that it is seated on the nerves of organic life, nor that that virus directly causes any alteration on the nervous centres. Also it is known that *ataxia*, or cephalic disturbance, and enervation, are the last alterations presented in that most violent disease.

227. Is that absorption conveyed by the air passages? I never saw from it direct lesion of the pulmonary organs. If in the career of yellow fever any pneumonic symptom is presented, it is merely accidental.

228. I have noticed when yellow fever prevails epidemically on our coasts, and also in the tropics, that in Havana, as in Spain, individuals may be seen walking in the streets, and feeling them-

selves well, but with faces of yellow hue, and with eyes which presented a glassy refulgence. These symptoms always indicate a speedy attack.

229. When that disease visits our coasts, cases in greatest number and severity are seen in the month of October, when it acts epidemically within its infected sphere, and calms prevail in our zone, the earth here having received the greatest degree of solar heat for the season.

230. Persons who come from the north of Spain, or from an elevated region, and visit southern localities where yellow fever is raging, are more subject to fall under it than the natives of such localities.

231. The experienced physician can easily distinguish a case that is likely to end fatally. Men of a Herculean frame of body and active life, corpulent and of virileage; also individuals of florid complexion, are peculiarly unfortunate when attacked by that terrible disease. The temperament which is most dangerously predisposed is that in which great energy of the heart's action is exhibited.

232. The morbific virus of the black vomit is variously modified in its effects, as displayed on its victims. In infancy it threatens with less danger, but is always attended with much risk after puberty; though there is much less danger to females, their catameneal discharge operating favourably.

233. Men of fine complexion, and effeminate, suffer less than robust subjects, or those who are broken by labour. It is always very dangerous in cases of drunkards, and in melancholic or hysterical patients; particularly when they are of a swarthy complexion, and whose hearts act strongly. Great physical force in the system augments the gravity of the malady.*

234. The fever of black vomit generally follows its career of synocha from maximum to minimum, and with a remittent type. When it passes irregularly into a typhoid form, it is a consequence of physical disturbances, preventing the disease from terminating in its elemental period.

235. I have stated that yellow fever generally follows the type and career of remittent, and in some cases the fever is evolved in a single accession of synocha from maximum to minimum, comparatively few patients have the accession from minimum to maximum. In the former case, the fever attacks like an explosion, and progressively diminishes until the end of the third day. In others the fever begins in a milder form, gradually increasing till the close of the third or beginning of the fourth day, when

---

* Corpora laxa, hinc feminæ et pueri facilius ferunt inflamaciones quam stricta, ut viri et senes. Periculosior semper est in scorbuticis, veneris, atrabiliaris, annosis, laboribus fractis.—*Boerhaave.*

Dr. Velazquez of Seville (as reported by M. Paraset) says, that persons of a temperament athletic, sanguineous, or bilious, suffer more from yellow fever than those who are cold and phlegmatic.

the fever terminates favourably in copious perspiration,* or it may be with atony of the heart, and exhibition of new symptoms,—the scene closing in death.

236. I have seen some patients in whom there appeared such a remission of fever, that they approximated to a state purely apyretical; and in a few cases I witnessed slight shiverings and coldness of feet; but scarcely have I met with that shade which could be considered as intermittent.

II. *Contributions to the Pathology and Treatment of Diseases of the Chest.* By EBEN. WATSON, A.M., M.D., Professor of the Institutes of Medicine in Anderson's University.

ON THE LOBULAR PNEUMONIA OF CHILDREN.

THE pulmonary diseases of children present many difficulties both to the practitioner of medicine and to the student of pathology. Nor do the writings of even the best authors on the subject always tend to remove these difficulties. Confused statements of fact are too often mixed up with, or made to sustain some plausible but insufficient theory, and thus the whole is either obviously unsatisfactory, or fails to account for all the phenomena which an extended survey of the disease brings into view.

These remarks have been dictated by an examination of the statements of authors more especially on the subject of my present communication. "Indeed," as Hasse observes, (Pathological Anatomy, Syden. ed. p. 251)—"the greatest discrepancy of opinion, or rather the greatest confusion, prevails" as to the pathological import of *lobular pneumonia.* And when one considers that it is only upon correct and definite views of the pathology of any disease that a rational treatment of it can be founded, my selection of a subject will need no apology; or if anything of the kind ought further to be stated, it should be a reference to the frequency and fatality of the disease. It is impossible to attain to anything like statistical accuracy on this point, but all careful practitioners will bear me out in the general statement, that this disease is the proximate cause of death in a large proportion of cases which appear in our mortality bills as deaths from bronchitis, from hooping-cough, from measles, and probably from several other diseases of infancy and childhood.

I shall, in the following short paper, pass rapidly under review:

1st, The morbid anatomy and clinical history of lobular pneumonia.

---

* "Sudor ille quidem esse optimus, qui die critico febrem solvit."

2d, The theories of the origin and pathological nature of the disease; and

3d, The therapeutic indications presented by it, and the most suitable means for their fulfilment.

Looking to the disclosures of the scalpel in subjects dead of this disease, there are evidently two kinds or degrees of it; one in which the affected lobules are isolated, with healthy pulmonary tissue intervening; and another in which the superficial lobules of greater part of a lobe, or of all the lobes of a lung, are implicated. In all my cases of lobular pneumonia, the disease has invariably affected only one lung, and more frequently the anterior than the posterior lobules of its lower lobe. In the inspections which I have had the opportunity of making, but which, it must be confessed, do not number very many, I have generally found the *superficial* lobules specially affected by the pneumonic condensation; and I am inclined to consider this the general rule in children; for in adults, when lobular pneumonia results from phlebitis, some of the central lobules are more usually attacked, and in the latter cases also, more frequently than in the former, does suppuration, or the third stage of the pneumonic process, ensue before the death of the patient. But wherever it is situated, whether on the surface or in the substance of the lobe, in the cases with which I have at present specially to do, the affected lobule is usually found of a deep red or violet colour; it does not crepitate when pressed between the fingers, but a little bloody fluid is generally squeezed out of its air tubes; it sinks in water, and its cells can only sometimes be inflated. Its cut surface is smooth and like that of hepatized lung. The capillaries in the walls of the air cells are gorged with dark blood, and they seem thickened with exudation matter. The lining of the bronchial tubes, especially of the smaller ones near to the diseased lobule, are generally deeply congested, and contain frothy mucus, which is occasionally tinged with blood.

Morbid anatomy, therefore, establishes two lesions in most of these cases, viz. bronchitis and condensation of the vesicular tissue of the lobules. It cannot, however, prove to us the priority of either of them. For evidence on this point we must look to clinical data, but even these do not afford a very satisfactory solution of the difficulty. I am well aware of the common opinion that lobular pneumonia is always secondary, but I am by no means persuaded that this opinion rests on a logical foundation. True it is, that in many cases bronchitis *seems* to precede, for a longer or shorter period, the pneumonic condensation of the lobules; but this is neither a universal nor a necessary course of things.

Case I.—I have notes of one case, of a child six years old, that died suddenly in a fit. He had been in good health up to the very day of his death, when certain obscure head symptoms presented themselves, but nothing to direct attention to the chest. On inspection, however, I found the whole *anterior* surface of the right lung, to the depth of about an inch, condensed, and of a violet colour. In fact the superficial lobules were in the second or hepatization stage of pneumonia. There was no trace of inflammation in the bronchial tubes, but there was deep venous congestion of the brain and its membranes, with slight effusion into the ventricles.

In this instance, then, the lobular inflammation seems to have been primary. The morbid process had not extended to the bronchi at the time of death, and hence, perhaps, the want of cough and other marked symptoms of pulmonary disease. It was truly a case of *latent pneumonia*—a character which some have thought so constant as to lead them to describe it under that name.* For even when *all* the symptoms direct attention to the lungs—when the patient has all the symptoms of acute bronchitis, the lobular affection frequently remains undiscovered till after death. There are no physical signs by which the condensation of isolated lobules can be determined in the living subject. The condensed portion is far too small, even were it not surrounded by air-containing vesicles, to give a dull sound on percussion; and neither the crepitating râle, nor any other distinctive murmur, is to be heard. Even when many lobules have become affected with the disease, it is still difficult to detect it by physical signs. The tone on percussion is but slightly, if at all altered, owing to the sponginess of the tissue behind the condensed layer; there is still no distinctive murmur heard through the stethoscope, and only an unusual faintness of the respiratory murmur, with *distant* bronchial râles. The sputa are seldom seen in these cases so well as to assist the physical diagnosis.

Nor are the rational signs often more available for diagnosis. It is difficult to determine the amount of pain, especially if of a dull character as pneumonic pain is known to be, suffered by young children, and the fever that exists is not greater than in cases of ordinary acute bronchitis. In some instances I have thought that the increased dyspnœa and the decubitus of the patient, marked the extension of the inflammation from the capillary bronchi to the air cells. For, although I cannot agree, with Seifert, to call this disease a bronchio-pneumonia, inasmuch as the pneumonia is present, in some cases, without the bronchitis, and while I acknowledge the great practical difficulty of determining the priority of the morbid affections, when co-existing in the same case, yet just because of that difficulty, and because of the inherent probability, or I might perhaps say the actual occurrence, in many cases, of this very sequence of events, I cannot deny its foundation in fact. The cases to which I here refer, as most clearly illustrating the fact that lobular pneumonia is sometimes secondary, are those in which it occurs in the course of hooping-cough, long ago pointed out by Dr. Alderson.*

---

* *E.g.* Guersent in Dict. de Medicine, tom viii. p. 96.

Case II.—I once watched such a case, the subject of which was a healthy infant at the breast. The other members of the family took hooping-cough, and in due course the baby was likewise affected. The disease was severe and was unchecked, for I had not at that time thought of the topical treatment. In a few weeks, however, a change occurred, evinced by a marked degree of dyspnœa continuing during the intervals of the hoops, and by a peculiar short cough without the hoop at all. She did not survive; and on dissection, I found the superficial lobules of the lower lobe of the left lung in a state of firm hepatization, and considerable vascularity of the whole bronchial mucous membrane.

I think the history of this case warrants the belief, that the hooping-cough and bronchitis existed first, and terminated in lobular pneumonia. I could relate many other very similar clinical histories warranting, perhaps, a similar conclusion, but as they were not confirmed by autopsy, I omit them at present.

Not only, however, may bronchitis pass into lobular pneumonia, but this latter may involve the deeper lobules of the lung, and thus terminate in lobar pneumonia. To my mind this would seem *primâ facie*, not only possible, but even probable; for both the anatomy of the lung and the progress of inflammation in other parts, warrant the presumption. Nor does clinical experience fail to supply illustrations of the fact; but before citing one such illustration, for I must content myself with only one, I may state it, as the result of my experience, that it is only after passing through this stage—after lobular has in some part of the lung become lobar pneumonia—that pleuritis occurs in these cases. I believe it will be found generally true, that lobular pneumonia is uncomplicated with inflammation of the pleura.

These, and several other points of interest, are well illustrated by the following case, which occurred to me last winter.

Case III.—A stout, and previously healthy child, was affected with symptoms of ordinary catarrh, which were treated for a time by domestic remedies. But when the fever began to run high, and the breathing to be markedly difficult, I was called in.

I found, on examining the chest, that the percussion sound was not altered, except in the præcordial region, where the natural *dulness* was both deeper and more extended than usual. The heart's impulse was strong, and the sounds were loud; but considering the age of the child and her other symptoms, I did not hesitate to refer the dulness to a pulmonary, and not to a cardiac lesion.

Auscultation informed me of the existence of bronchial râles over the greater part of the left side, and in front the respiratory murmur could not be distinctly heard. I at first thought that this was owing to the co-existing bronchitis, but am now convinced that it arose in great measure from another cause. In and around the præcordial region, however, there could be no doubt that there was deep condensation of the pulmonary tissue, for I could only hear dry bronchial respiration in that part. No friction sound was detected. In the other lung the respiration was puerile.

---

* Medico-Chirurgical Transactions for 1830.

The treatment consisted in the application of leeches, followed immediately by a blister, and repeated doses of calomel and antimonial wine, the bowels having been freely acted on before I saw the patient.

A slight improvement seemed to follow the first use of these means, but this was only of short duration; for the respiration became even more rapid, and the fever more distressing. Rest was only procured for short periods by the help of opiates. I again and again ordered large blisters over the affected side, in hope of relieving the oppressed lung, and I endeavoured at the same time to sustain the strength of my patient by dietetic measures, but all my efforts were vain. A new and fatal stride in the progress of the malady was too plainly indicated by a rapid failure of strength, and a slight rigor, which occurred on the fifteenth evening after my first visit. After this she refused to lie down at all, but sat on the nurse's knee, supported by her hands, crossed over the affected side, to which she constantly leaned. There was no change in the physical signs, except a curious metallic tinkle which accompanied each impulse of the heart, and which I now believe to have been caused by the motion communicated by the heart to the effusion which lay encysted behind its pericardium.

A mixture with carbonate of ammonia was substituted for the antimonial wine, and the calomel was diminished to 3 grains in 24 hours; and solution of the muriate of morphia was more frequently administered. The bowels were kept regularly and freely open by the calomel, without requiring any additional laxative.

Dr. James Watson, my father, saw this little patient with me next morning, and sanctioned my views of the case. We both, however, thought that the heart was at this time slightly displaced to the right side.

I need not continue the details of the case any farther. The oppression of the breathing increased, the child could only lie on the affected side, but still percussion elicited a normal and comtympanitic sound over the back and lower part of the chest, and the dulness was confined to the cardiac region in front. Early on the 21st, she screamed as if suddenly pained; after which she sank rapidly, and died in a few hours. The fatal event happened 17 days after my first visit, and probably not more than 21 after the commencement of the disease.

On the 23d I performed the inspection in my father's presence. I commenced by percussing the chest, and a distinctly tympanitic sound was given all over the left side, except in the præcordial region, where it was somewhat dull. The usual incisions were next made, and I had just passed my knife through the sterno-clavicular joint and the cartilage of the first rib, when there began to flow from the pleural cavity a large quantity of fully-formed pus. I quickly finished the section of the ribs, and found the whole cavity filled to overflowing with the pus. There was no exudation matter on the costal pleura, but the pleura covering the left side of the pericardium was thickly coated, and the margins of this deposit were loose and ragged, as if they had formed parts of a fibrinous cyst. Other shreds of this cyst were found among the pus. The lung was of course separated by the pus from the ribs, but was not much compressed or diminished in volume. When its substance was cut into, it was seen to be partly condensed, and of a deep-red colour, and partly spongy and natural. The former sank in water, and could not be made to crepitate, while the opposite was true of the latter portions. On more careful dissection, it was seen that the diagnosis I had formed was perfectly borne out by the inspection, for the greater part of the middle lobe, and the whole anterior lobular surface of the lung were hepatized. The heart was displaced to the right side of the sternum, but was itself unaltered. Other organs were normal.

This then was a case at first probably of lobular pneumonia, in the course of which the substance of that portion of the lung behind the pericardium had become hepatized, and the pleura over it inflamed. Exudation matter was thrown thickly out, gluing the pulmonary pleura to that which covered the pericardium, so that when suppuration occurred, the abscess was local, being retained in a bag of false membrane around the posterior aspect of the heart. I have no doubt that the motions of that organ so affected the pus in this situation, as to cause the tinkling sound formerly mentioned as accompanying the cardiac impulse. As, however, the effusion increased in quantity, the sack which contained it burst, and the child died of the shock occasioned by its sudden discharge into the general cavity of the pleura. I need hardly say, that from the position of this local empyema, it would have been impossible, and from the active progress of the disease it would have been useless, to have performed paracentesis at any period of this case. I would also call attention to the fact, which was carefully established before opening the chest, that, excepting over præcordial region and its immediate neighbourhood, there was no marked dulness on percussion, although the pleura was full of pus to overflowing. The left lung was, as I have formerly stated, but slightly compressed against the spinal column, and the heart was displaced, so that we are shut up to account for the sonoriety of that side by the elasticity of its ribs, and the sponginess of a great part of the lung. These causes, especially the first, were allowed to act the more freely in this instance, because, though the pleura was full, it was not stretched in such a way as we see in a general empyema; there was no bulging of the intercostal spaces, the contents of an abscess had merely been poured into it, and a fatal shock had been the result. The parietes were therefore as free to vibrate under the stroke of the hammer, as if their contents had been normal, and the case very strikingly illustrates the fact so ably insisted on by Professor Skoda, that if the greater part of a lung remains permeable to the air, pleuritic effusion of considerable thickness, and pneumonic condensation of considerable extent, may fail to alter, in any very marked degree, the tone of the percussion sound.

There is an interesting, though happily not a very numerous, class of cases of creeping pneumonia, by which I mean pneumonia gradually and sometimes very stealthily extending over perhaps a whole lung, or even the greater part of both lungs. These cases are referred to, in his usual graphic manner, by the late Dr. Graves in one of his clinical lectures (p. 682); and it must strike every one who has witnessed them as wonderful, not that many of the sufferers perish, but that even a few of them recover after so large a portion of the lung had been indurated. Now I think that many of these cases commence in lobular pneumonia, and throw light on its nature and mode of progression, for it is only because of the slow and gradual implication of different lobules of the lung that the remaining part is capable of over-exerting itself so much as to sustain the vital function of the organ. This must, from the nature of these cases, be, generally speaking, matter of inference, but it is sometimes also matter of observation in the concluding stages, if not at the commencement, of the disease.

Case IV.—In February, 1852, I was consulted regarding a boy about twelve or thirteen years of age, who had become gradually breathless. There was no other symptom apparent to an ordinary observer, except perhaps an anxious expression of countenance. On examining the chest, I found the left lung completely consolidated. The percussion sound was perfectly dull, the respiratory sounds were purely bronchial, and the side moved little or none during an act of breathing. On the other side the respiration was puerile.

Blistering, calomel, and diuretics were immediately employed, but could not save the patient from an effusion of serum into the pleura, which occurred a few days after my first visit, and added greatly to the distress and danger of the patient. Dr. M'Farlane saw him with me at this time, and we had some thoughts of puncturing the parietes. However, after extensive vesication and plentiful doses of blue pill, the effusion disappeared, and the boy gradually improved. But it was evident from the physical signs, that the re-solution of the condensed lung began first in the interior, leaving a layer of lobules still condensed externally, so that if the boy had died at this stage, we should have had the ordinary appearance of lobular pneumonia. Moreover, there was no suppuration of any part of the lung in this case; in short, from the peculiar nature of lobular pneumonia, an extreme case of which I believe it to have been, the third stage of the pneumonic process is not exemplified. And this leads me, having stated and illustrated the chief facts in the pathological history of lobular pneumonia, to consider the nature or theory of the disease.

It may seem surprising after what has preceded, that some writers on children's diseases should have fallen into the mistake of denying the inflammatory nature of lobular pneumonia altogether. But such nevertheless is the case. MM. Legendre and Bailly* have endeavoured by the experiment of insufflation, to establish that the condensed part of the lung in lobular pneumonia was merely collapsed, and not the subject of inflammatory action at all. Without acknowledging the researches of Dr. Jorg, an interesting account of which was given by Dr. Graves,† and which is well worthy of attentive perusal, they assumed that the lung in a case of lobular pneumonia had returned to its unexpanded state—the atelectasis of Jorg, and they therefore changed the name to "*état fœtal*," and they tell us that the chief causes of this affection are debility, congenital or resulting from disease, prolonged dorsal decubitus, and obstruction of the bronchi by a thick and abundant mucus. I should have been contented with remarking on this theory of the disease, that it certainly referred to some condition of the lungs with which I was unacquainted, and which was entirely different from lobular pneumonia, had it not been that the theory has been adopted, in its utmost extent, and expounded in a very unmistakeable manner, as the rationale of lobular pneumonia, by Dr. W. T. Gairdner.‡

Dr. Jorg concluded, from his observations—"that in estimating the physiological effects of labour, and the accompanying pains, we must not restrict ourselves merely to the expulsion of the child, and the restoration of the uterus to a state compatible with the mother's safety, but we must consider the act of parturition as acting powerfully by means of its duration, and the number and energy of the accompanying uterine contractions, upon the system of the child, so as to prepare it for new efforts necessary for the discharge of the altered functions of respiration; a parturition of the natural duration gradually checks the placental circulation, and limits that of the fœtal chiefly to its own system, while it engenders in the latter a gradually increasing, and finally an urgent want of some new mode of respiration. If the act of parturition be much shorter in duration than is natural, the child incurs the danger of being born in other respects healthy, but not at the moment endowed with the organic stimulus to expand its chest, for the purpose of making the first inspiration. The more urgent this stimulus, the more decided and healthful its effects; the more powerful will be the exertion of the respiratory system, and the more perfect the dilatation of the lungs by the air at the first inspiration."*

---

* Archives Généralés de Méd. tom. 64.

† Dublin Journal of Medical Science for 1836, vol. ix. pp. 470–486.

‡ Brit. and For. Med. Chur. Review, No. XXII. p. 453, *et seq.*

I have quoted this passage not only because it contains Jorg's explanation of the origin of atelectasis, but also because many of the truths which it embodies are little, if at all considered either by accoucheurs or by physiologists. There is, however, another purpose which I intend to serve by it, viz. to contrast the physical state of the lung here described with that found in lobular pneumonia. How different is the simple collapse of the air cells from the solidification of the part, by stasis of the blood in its numerous capillaries? Moreover, as Dr. Gairdner himself very shrewdly remarks,† "to admit the persistence (even the persistence) of the lung in the *état fœtal*, as a consequence of interruption to the great physiological changes taking place at birth, does not appear to any mind a very violent proposition; but to understand why the organ should return to that condition after being once expanded, and that without any positive disease of its texture tending to occlude the air cells, is not so easy." It certainly is not easy, nor do I, for my part, think it has been rendered one whit easier by Dr. Gairdner's theory of bronchial obstruction, which he developes in the sequel of his paper.

Dr. Gairdner's theory seems to be a hybrid between that of Legendre and Bailly, formerly stated, and that of Seifert, who considered lobular pneumonia as a simple extension of bronchitis to the terminations of the bronchi in the air cells—a "*bronchio-pneumonia*" in short. Now, Dr. Gairdner accepts the statement of the former gentlemen, that the lobules are in a state of collapse in "so-called lobular pneumonia," and he accounts for this return to the *état fœtal*, by the supposed occurrence of a mucous plug in one of the bronchial tubes, in which it acts as a valve, preventing ingress of air to the air cells, but admitting of its egress during expiration. Now, it does seem to me that Dr. Gairdner brings forward no proof, nor even any plausible reasons, for this theory. The experiments of Traube and Mendelsohn are quite beside the question, for, though they prove that a paper pellet may, if introduced into the bronchus, act in causing collapse of the air cells beyond, they do not prove that mucus would. I believe that either the air would pass through the mucus, supposing it to be fluid, and into, as well as out of the air cells; or that it would remain fixed, supposing it to be insipissated, not permitting the air to pass one way or other. In the former case there could obviously be no collapse of the air cells at all, and in the latter case the result would be a pulmonary abscess. In proof of this statement, I refer, not to experiments instituted on the lower animals, but to the history of actual cases in which foreign bodies have been accidentally introduced into the bronchial passages. Two such cases have come within my own more immediate knowledge. One occurred under my own care many years ago, when acting as surgeon's clerk in the Royal Infirmary. The subject of this case was a little girl who had swallowed a *whelk* into the "wrong throat," and that of the other case was a medical gentleman who, in eating hurriedly, allowed a mutton bone to pass through the glottis. This gentleman was attended by my father. In both these cases the patients passed through a very critical state; but instead of collapse, hepatization and suppuration of the lung occurred, and the foreign body was expectorated. In short, obstruction of the bronchi, if at all complete, would be more likely to produce common pneumonia than the *état fœtal.*

---

* Dublin Journal, vol. ix. p. 471. † Brit. and For. Review, p. 455.

In fine, I think I am entitled to conclude with Hasse, who has given a very able and interesting review of the confused statements of authors on this subject,* that the organic affection of the lungs to which new-born infants are prone, which was named *atelectasis* by Jorg, is altogether distinct from lobular pneumonia. We must therefore seek for the rationale of the latter in some other morbid process; and this has been generally done by referring it to some modification of inflammatory action. Guersent was one of the earliest writers on lobular pneumonia, and his opinion of its origin is expressed in the following sentence:—"Les pneumonies latentes commencent presque toujours par de simple bronchitis que paraissent d' abord très légères; peu à peu ensuite cette affection inflammatoire se communique au tissu vésiculaíre du poumon."† More recently, as I formerly stated, Seifert has given to the disease the name of *bronchio-pneumonia*, and besides him, many others, among whom Dr. Cheyne may be numbered, have adopted the theory in question. There is, however, a numerous class of writers who consider lobular pneumonia a more specific disease, occurring at least sometimes independently of bronchitis, and not simply an extension of that affection to the air cells.

Some of these, as Billiard,‡ consider the lobular inflammation of the lung as essentially different from ordinary pneumonitis. According to that author—"la pneumonie des jeunes enfans est evidemment le resultat de la stase du sang dans les poumons. Ce sang fait alors, en quelque sorte, l'office de corps etranger; il concourt lui-meme, à alterer le tissue du poumon avec lequel il se mêle, s'organise, s'identifie de maniere à former ce qu' on appelle l'hepatisation du poumon." But this theory has found few supporters among more recent authors; thus MM. Rilliēt and Barthez simply tell us that—"on appelle pneumonie lobulaire cette variété de l'inflammation *qui occupe un ou plusieurs lobules isolés;*"[*] and although Hasse says that these authors describe this lesion as "a *peculiar alteration*, namely, carnification,"[†] yet on a careful perusal of their treatise we do not perceive any difference made between lobular and lobar pneumonia, except the site of the morbid process. Indeed they treat of "la carnification" in a different chapter.

---

* Pathological Anatomy, Syden. edition, p. 251.
† Dictionaire de Medicine, tom. viii. p. 96.
‡ Traité des Maladies des Enfans, p. 534.

Rokitanski states the same opinion more distinctly, as follows:—"Pneumonia, according to its variety, attacks a whole lobe, or the greater part of one, and it is then termed *lobar;* or it attacks only smaller portions of the lungs, a number of individual lobules, or single aggregations of lobules, between which we find the parenchyma in a comparatively normal state, it is then termed *lobular pneumonia.*"[‡] And touching the variety of inflammation which attacks the lobules, he tells us farther on,[§] that it is the catarrhal or non-croupous.

M. Grisolle, who has devoted an entire volume to the consideration of the different kinds of pneumonia, seems to follow very closely the opinions and statements of MM. Rilliēt and Barthez, as to the lobular variety; treating of it as—"une des phlegmasies pulmonaires du jeune âge."[||] From his indistinct and prolix statements, we turn with pleasure to the pages of M. Lebert, who tells us[¶] that—"l'afflux sanguin qui constitue l'engouement pulmonaire, est suivi d'une gêne de plus en plus grande dans la circulation pulmonaire, gêne qui se termine par *une stase partielle lobulaire ou plus etendue.*" This occasions a transudation of liquor sanguinis, in which are found "des globules granuleuses," as well as blood corpuscles from ruptured vessels. These elements gradually consolidate and form "le ramollissement rouge" of Andral, which, as I formerly mentioned, is the common state in which we find the diseased portions of a lung affected with lobular pneumonia.

I am myself inclined to agree with M. Lebert in his theory of this disease, and to account for the fact just stated, viz. that we generally see the second stage of the pneumonic process exemplified in the hepatized lobules of children, by their inability long to survive any important interruption to the function of respiration. They therefore generally, though not universally, succumb to the disease before it has reached its third and final stage. But in adults, in whom the disease is almost constantly secondary, resulting from some form of phlebitis, we just as commonly meet with suppuration of the affected lobules before the patient dies. But while I would, therefore, accord to the proposition that lobular differs from lobar pneumonia in no essential, excepting the extent of the part affected by the disease, yet for reasons formerly given I cannot deny, nor is it necessary for consistency that I should deny, that the pneumonic affection is frequently secondary to bronchial inflammation, as Guersent originally stated. One has only to study the minute anatomy of the terminal bronchi, to be persuaded that inflammation may invade the air cells, by reason of their continuity with the bronchi, and yet the disease secondarily produced is something very different from bronchitis. For how materially is the structure of the tubes altered on their approach to the air cells; how few of the characters of a mucous membrane does their lining membrane retain. Why, about one-eighth of an inch from the last air cell to which it leads, according to Messrs. Todd and Bowman, the terminal bronchi lose their epithelium, as well as their muscular tunic, and are "reduced to basement membrane, and yellow elastic fibres, which become blended into a single coat—the only membrane composing the tubes beyond, and the air cells."* If, then, the structures of these two parts of the same tube are so widely different, it is but in accordance with the laws of the animal economy that disease should evoke from them different morbid products, and be accompanied with different pathological results. Thus it is, in short, to quote once more the words of Lebert, that—"ces divers états, tout différents les uns des autres qu' ils paraissent au premier aspect, ont pourtant entre eux des lieus physiologiques bien réel et faciles à démontrer."†

---

[*] Traité Clinique et Pratique des Maladies des Enfans, tom. i. p. 62.

[†] Path. Anat. p. 256.

[‡] Path. Anat. Syden. edition, p. 83.

[§] Page 90.

[||] Traité Pratique de la Pneumonie, p. 448.

[¶] Physiologie Pathologique, tom. i. p. 127.

Having thus, at some length, explained the nature of the lobular pneumonia of children, I must now discuss the subject of its treatment in a very few, and these very short paragraphs.

The first therapeutic indication is to relieve the congested lobules and equalize the circulation through the pulmonary capillaries. As an essential step to this end, the secondary excitement of the general circulation must be allayed; the heart's action must be diminished, in order that the over-loaded pulmonary capillaries may have time to disgorge their contents into the radicles of the pulmonary veins. And in pursuing this object, we must bear in mind the normal forces, the full operation of which we desire to recall. We must remember the power which a natural and full act of respiration exercises over the motion of the blood within the lungs, as well as the undoubted influence which the chemical changes there wrought in the blood exerts over its passage through the capillaries, where these changes are, or ought to be effected. It is not the quickness of the breathing, but the fulness of it which brings into most effective operation the forces just mentioned. The irritated or oppressed lung excites numberless imperfect respirations, a hundred of which do not accomplish the atmospheric interchange of one such normal act.

---

* Physiological Anatomy, p. 390.

† Phys. Path. tom. i. p. 129.

It is therefore a matter of immense moment in these, and indeed in all the pulmonary diseases of children, to soothe their nervous excitability; and fortunately this may often be effectually done by the very same measure that is best calculated to excite the perspiratory function of the skin, viz. the warm bath. The bowels should also be freely moved, not only in the commencement, but during the whole duration of the case; for it is a fact well known to all practitioners, that any disorder of the primæ viæ operates most perniciously on the excitable nervous systems of children. Besides these means, the use of repeated doses of the tartrate of antimony, either in simple solution or in the form of the antimonial wine of the pharmacopeias, is very useful in moderating the heart's action, as well as in determining to the skin. The tolerance of antimonials in children affected with acute lobular pneumonia is often very great, and is perhaps greater than in adults, proportionally to the age of the patients. Læennec has stated that the patient becomes habituated to the drug, so as to tolerate it in large quantities even during convalescence,* and after the violence of the inflammation has been subdued. But I have not verified this statement in regard of children, who, on the contrary, bear the continuance of the medicine very ill in any state of weakness, whether during convalescence from the violence of the disease, or when sinking under its effects. This remedy, therefore, should be given with care and watchfulness; and, when so given, it is perhaps our most generally useful remedy in the early stages of the pneumonic affections of childhood.

I have never found it necessary to use the lancet in the case of young children who have been attacked by this disease, but I have found the application of leeches always beneficial in its early stage. But as the disease is apt to be of considerable duration, (from two to three weeks, or even longer,) unless its progress be cut short by a fatal issue, the number of leeches employed at first should not be great,—they should rather be repeated, if their effect be deemed insufficient. "I am most anxious," says Dr. Stokes,† "to press the importance of local bleeding in the treatment of pneumonia, for I consider it as the principal remedy." And, whatever doubts I may have as to the truth of this proposition when stated generally, I cannot hesitate to subscribe to it in regard of the lobular pneumonia of children. Nor is it less, but on the contrary even more true of children than of adults, that "we may, directed by the stethoscope, continue day after day to detract blood from the affected part, while the patient's strength can be supported by food, and even by wine, if necessary."‡

---

* Læennec, Forbes' Translation, p. 256.

† Stokes on the Chest, p. 343.

‡ Op. citat. p. 344.

Of course this opinion, like all others involving general rules of practice, must be acted upon with due caution and discrimination, especially as to the type of the inflammation, and the age of the patient in any particular instance under treatment. I generally in these cases follow the bleeding by an opiate, by which means, I believe, its sedative effect is increased and perpetuated.

At a somewhat later period of the disease, though indeed there is but little time to come and go upon, blistering is of undoubted benefit, both by its contra-irritant and stimulant effects. I know that there is a prejudice against blisters in childhood, and especially if the patient, as often happens, is at the same time labouring under some of the enanthemata, *e.g.* measles, but I believe that there is no real danger in the case, nor even the same frequency of painful dysury as among adults. I do not doubt that in some severe epidemics of measles, the effects of blistering the skin were very severe, and even sometimes fatal, but in ordinary seasons it would be foolish, if not criminal, to omit such a powerful remedy for the dread of an historical evil.

During the same period of the disease, the exhibition of mercurial remedies is sometimes of essential service. I say *sometimes*, because I have not much faith in the antiphlogistic powers of the drug, and if there be no exudation or effusion, its absorbent action is little or not at all required. It is, moreover, very difficult to bring young children fairly under the mercurial influence, and therefore, in their case, any effects flowing therefrom are not perhaps to be much relied upon. There is, however, one excellent and undeniable effect of administering repeated doses of calomel, and that is, the maintaining a regular discharge from the bowels; and as the purgative effect of calomel depends on its cholagogue property, we thus secure a favourable state of the principal digestive organs,—a matter so important, that many will consider it a sufficient justification for the employment of the medicine, without expecting any specific or local action at the seat of the disease.

Emetics are especially useful in cases in which bronchitis complicates the pneumonic affection, and these I should repeat as Læennec recommended, at short intervals during the course of the disease, "according to the patient's strength, and his power of supporting their action." I may remark here, that it is often difficult to make these young patients vomit, and they often require even powerful emetic doses to be administered every quarter or half-hour, till the effect is produced. Unless the vomiting be free, but little good is done; the bronchial tubes are not sufficiently cleared to admit fresh air to the air-cells, nor has the previous depression of the system been sufficiently great to produce a marked effect on the fever.

The subjects of regimen and diet might, in such a paper as this, be altogether omitted, were it not for their paramount importance. Indeed, such is their importance to the successful treatment of these cases, that no less an authority than Professor Skoda is said to rely upon them alone. "Après avoir reduit la traitment de la pneumonie à l'administration du sublimé à très petites doses, le Professeur Skoda a fini par s'en tenir à l'emploi des moyens diététiques et en particulier du regime lacté." * And though I cannot yield my unconditional assent to such negative treatment, even when sanctioned by the authority of so eminent a physician, yet I do not know that any part of the practitioner's duty is more important than that of prescribing an appropriate diet, and directing the attention of nurses and friends to the due ventilation and heating of the apartment in which the patient is confined.

III. *On the Therapeutical Properties of some of the more important Articles of the Materia Medica.* By WILLIAM DAVIDSON, M.D., formerly Physician to the Glasgow Royal Infirmary, and Lecturer on Materia Medica.

THE following remarks have been written, not with the view of propagating anything specially novel, but rather with the object of dissipating exaggerated notions, and simplifying medical practice. The evidence for or against the virtues of many drugs is almost interminable, and there is not space here for such a discussion; but surely there is something in the fact, that many writers on materia medica, &c. have been merely chroniclers of results and averments of cure, which were founded on too limited a number of experiments, or were coincidences, due not to the agent employed, but to nature, time, or the hygienic accompaniments.

MEDICINES WHICH ACT ON THE BRAIN AND SPINAL MARROW, (*Narcotics.*)

I.—OPIUM.

This medicine being probably the most important in the materia medica, when judiciously employed, deserves a careful consideration. When taken in a moderate dose in a healthy individual, it causes slight cerebral excitement, dryness of the mouth, a little acceleration of the pulse, an astringent effect on the bowels, and checks many of the secretions, with the exception of that of the skin, which is sometimes augmented. These effects are increased by larger doses, so as to cause considerable disturbance in the functions alluded to. It is obvious, therefore, that in diseased actions these considerations must be taken into view in estimating its curative or palliative operations on the system. It has been employed in a very great variety of diseases, and in a considerable number of these the testimonies in its favour are clear and indubitable, but in others very problematical.

---

* Archives Generales, 4e série, tome xxix. p. 343.

Typhus and Febrile Diseases.—It can scarcely be supposed that, *à priori*, opium would be indicated as a useful remedy in fever, as it occasions febrile symptoms in a healthy person, and might thus naturally be supposed more likely to aggravate those already in existence. It was, nevertheless, and at no distant period, a very general practice to give fever patients a regular draught or opiate every night, with the view of procuring rest. This practice is now by no means so general, but many routine practitioners have still a strong predilection for this mode of treatment. The practice is unquestionably injurious, inasmuch as it often increases the tendency to delirium, augments the thirst, and constipates the bowels; evils of very considerable magnitude in the aggregate. In some cases its injurious effects are not restricted to these, for it occasionally seems to induce a tendency to stupor, or coma, with all its alarming consequences. Nor need we wonder at this, when we consider the excited state of the brain, and its peculiar tendency to lapse into the very state that opium causes in a healthy individual. This medicine in fevers, and analogous febrile diseases, should, therefore, be restricted to exceptional cases; as, for instance, to control the action of the bowels, to relieve some special pain, spasm, or nervous affection, which are not the usual or ordinary accompaniments of the disease; and even in these cases, large doses cannot be given without considerable risk. When diarrhœa occurs, ten drops of the tincture of opium, repeated twice or three times a-day, according to circumstances, will, in a large majority of instances, be sufficient to control the affection; and this dose rarely if ever acts upon the brain in a soporific manner. Dr. Graves has lately lauded a combination of tartar emetic and opium in certain cases of cerebral and nervous excitement occurring in typhus, but it is somewhat doubtful that the profession will be able to confirm to its full extent the experience of this distinguished physician. In fine, opium has no power in arresting the progress of typhus and other regular febrile diseases, and its benefits, except in the cases mentioned, are rarely little more than a temporary lull of the symptoms, with a subsequent exacerbation.

Delirium Tremens.—Shortly after the use of opium was recommended in this disease, it was considered almost a specific, and sometimes a very large amount of the drug was exhibited before any result was obtained; the practice being in accordance with the theory, that a long-continued sleep was the only passport to a cure. This extreme practice is now much moderated, as few medical men now-a-days would have the hardihood to introduce into the system a poisonous quantity of opium, as they ought to know, that this, when the violence of the disease has run its course, may produce a state of irrecoverable coma. Opium is unquestionably useful in some cases of delirium tremens, but it ought to be employed in moderate doses. In general it is much safer, and I think more successful practice, to treat the disease by cold and other local applications to the head, attention to the bowels, and the exhibition of a moderate amount of alcoholic stimulus and carbonate of ammonia; for in bad cases nothing short of a poisonous quantity of opium will speedily cause sleep. In inflammatory and other diseases of the brain, its employment is generally injurious, although we might be warranted in a few cases to try a minute dose in combination with calomel, as a kind of forlorn hope.

Diseases of the Chest.—Acute affections of the chest are rarely benefitted by opium; indeed it often causes an aggravation of the symptoms, if exhibited alone or uncombined with some other medicine which modifies its action, such as ipecacuan, tartar emetic, or calomel. This may readily be explained from its operation in checking the secretions of the bronchial tubes, and by its exciting influences. At the same time, we must admit it to be a medicine of some power when combined with calomel and ipecacuan, in simple pneumonic inflammation; but particularly in affections of the serous membranes, such as pleuritis, carditis, and pericarditis. In acute bronchitis, influenza, and catarrhal affections, it rarely does good, often harm, by drying up the secretions and increasing the febrile symptoms; but in chronic affections of this kind, when exhibited in moderate doses and in combination with ipecacuan, tartar emetic, squills, or some other expectorant medicine, it has considerable efficacy in relieving the harassing cough, and inducing rest. In spasmodic affections of the lungs, it requires to be exhibited in full doses to produce relief, and in spasmodic asthma a somewhat large dose in combination with ether, is a most certain and efficacious remedy for a paroxysm in the large majority of cases. Phthisis pulmonalis, when confirmed, although not under the curative influence of opium, is often benefitted by its use, as it relieves the harassing cough, and checks diarrhœa when present; but when exhibited in large doses, or too frequently, it increases the hectic symptoms, and hastens on the fatal termination. In the incipient stages of this disease, when there is a chance of cure by change of climate, or other means, opium is highly objectionable, as it deranges the functions of the digestive apparatus, and counteracts the influence of hygienic regulations.

Affections of the Stomach and Bowels.—Diarrhœal affections of almost every kind, when not dependent on ulceration or organic diseases, are generally under the control of opium combined with other remedial measures; and even the latter cases can be greatly mitigated by its employment. It is necessary in many instances to premise a purgative, such as castor oil, rhubarb, or senna, with sometimes the addition of one or two grains of the hydrarg. c. creta, in order to evacuate any hardened accumulation or morbid secretion, and then to exhibit ten drops of laudanum every four or six hours according to the urgency of the case. A larger dose is occasionally required, but this should be avoided if possible, as it is liable to induce sickness, thirst, and febrile excitement. The addition of catechu, logwood, chalk, or other astringent, is often useful when the disease does not readily yield. Dysentery in tropical countries is often treated by large bleedings, and even in this country I have seen, during the prevalence of a severe and somewhat fatal epidemic, the practice tried, without any apparent advantages. In the treatment of this disease opium is indispensable, but it should be combined with calomel in the dose of ½ gr. of the former to 2 grs. of the latter every four or six hours, alternating with doses of castor oil every second day, and be accompanied with external counter irritation to the seat of tenderness in the abdomen, according to the circumstances of the case. Cholera of the British character, in the large majority of cases, is curable by opium; although cases do now and then occur, particularly in old persons, where its power is limited. Full and frequent doses, in the commencement of the treatment, are required to give a decided check, if possible, to the disease. It has less power in Indian cholera; still, with all its limitations, and notwithstanding the multiplicity of remedies that have been tried and recommended, it is the only one entitled to confidence, along with other adjuvants. It is a very generally entertained opinion among the profession, that the diarrhœa, which often prevails during the existence of an epidemic of this kind, and which often precedes the disease, is a premonitory stage of the affection, and that if this can be checked, the development of the malady is prevented. No precise experiments, or series of correct observations, have ever been made, so far as I am aware, to determine this point; but as the belief is rational and quite consistent with all the known laws of the chylopoietic organs, the practice ought to be considered a very judicious one; for, if it be unfounded, the evil inflicted by the opium is small, while, if correct, the advantages are most vital in the calculation. In regard to the form or preparation best adapted for this disease, the ordinary tincture, or opium in the solid state, if not superior is at least equal to any other that has been generally tried. Opium has been recommended in obstinate constipation of the bowels, ileus and hernia, but the practice is problematical. No doubt spasm exists to a great extent in these affections, and it may be of service in relieving this; but then it is accompanied with the great evil of checking the peristaltic motion of the bowels, and the intestinal secretions. It should not, therefore, be employed until the evacuating plan or other means have been tried unsuccessfully. Cramp of the stomach is an affection accompanied with extreme pain, although not in general dangerous in its tendencies; and as no special bad consequences are likely to result from a full dose, such must always be given before complete relief can be obtained. For this purpose a teaspoonful of laudanum is often required; and if the individual be strong and vigorous this quantity is perfectly safe, and it may be combined advantageously with twenty or thirty drops of sulphuric ether. The disease may, in general, be readily distinguished from an inflammatory affection of the stomach, by the absence of any special pain on pressure, by its seizing the patient somewhat suddenly, and there being no febrile excitement. In obstinate vomiting, opium is sometimes a very efficacious remedy in the form of pill, and when accompanied with constipation of the bowels, one or two drops of croton oil may be combined with it, so as to insure, if possible, a speedy evacuation of the bowels.

Affections of the Kidneys, Bladder, &c.—Opium is often useful in relieving spasm, and other irritations of the kidneys, bladder, &c. When a calculus is passing along one of the ureters the pain is often of the most severe kind; and opium, along with the warm bath, is generally indispensable in such cases, in order to relax the spasm, and facilitate the passage of the stone. In cases of spasmodic stricture, or where spasm has supervened in an ordinary case, an opiate, followed by rest for two or three hours, is sometimes efficacious in promoting a flow of urine; at the same time, if the symptoms be severe and the accumulation in the bladder considerable, the treatment ought never to be trusted to such means; for the passage of an instrument is then absolutely required for the safety of the patient. Strangury, when arising from excitement of the mucous coat of bladder, or other sources of irritation, and not accompanied with acute inflammation, often requires an opiate for its relief, particularly if severe.

Rheumatism, Hemorrhage, Diabetes, &c.—Acute rheumatism is sometimes treated with large and repeated doses of opium, and it is said successfully; but in such an erratic and irregular disease, in its movements and metastases, and in which so many remedies of totally different character have gained a name, the evidence in its favour cannot be considered conclusive. At the same time, it is pretty well established that calomel and opium has some power over the disease, and may frequently be a component part of the treatment when carditis or pericarditis is associated with it. Hemorrhage, from several sources, is considerably under the power of opium. In discharges of blood from the stomach and bowels, a combination of acetate of lead and opium is an excellent formula for its exhibition. It has also great power over uterine hemorrhage. In severe flooding after delivery, the exhibition of opium in large doses is very efficacious; and when much exhaustion has been produced by the bleeding, a small teaspoonful of laudanum will not be found more, in general, than is required.

In minor discharges of blood from the uterus, as after abortion in the early months, or in menorrhagia, a combination of equal parts of laudanum and the tincture of the muriate of iron, will be found a medicine of considerable value when exhibited in doses of thirty drops every four or six hours.

Diabetes was at one period thought to be curable by opium, but later experience has proved the fallacy of this opinion. It has, however, a very powerful, though only temporary influence in checking the formation of sugar in the system, and in diminishing the quantity of the urinary secretion. By what *modus operandi* this is effected, has not been satisfactorily explained; but probably its action may consist in diminishing the secretion of gastric juice, (as it is well known to check the secretions from the mucous membrane of the digestive organs,) which, from its morbid qualities, seems to possess the property of converting starchy and other substances into saccharine matter. As an adjuvant to the dietetic, and other principles of treatment, its employment, to a moderate extent, is in many cases unquestionably useful.

Tetanus, and some other convulsive diseases, have often been treated with very large doses of opium, and theory would naturally incline us to believe in its efficacy; but the profession do not now put much faith in it. Large and almost poisonous doses have frequently been exhibited, as the sensorium is not easily affected; but caution in this respect should be observed, for it may accumulate and prove ultimately poisonous, thus leaving no chance for the action of other remedies or the curative agency of nature. The external application of opium, or some of its various preparations, is also frequently resorted to for the relief of local pains, and may have a certain effect in dulling the sensibilities of the affected parts, but cannot be much depended upon if a decided effect be desired. The method most likely to ensure this result, in a severe case, is to blister the part, remove the cuticle and dust upon it one or two grains of a salt of morphia. Opiates are also often used in many other diseases to relieve troublesome symptoms, to procure rest in irritable patients, to promote sleep when this is otherwise transient and irregular, and sometimes with an indefinite notion, in obscure cases, that its operation will either subdue or calm for a time the violence of the symptoms. In most of these cases the employment of opium is ultimately injurious; for the obvious reason that it deranges the functions of digestion and those of the various secreting organs. If a person cannot rest because he is irritable, hypochondriac, hysterical, or possibly maniacal, a full opiate may probably give him a comparatively quiet night, but the chances are that the disease will be afterwards aggravated; and unless the dose be regularly repeated (which would be ultimately ruinous), even an apparent amendment would not be the result. In several of the affections alluded to, it will be found that the irritability, want of sleep, hysterical or hypochondriac tendencies are owing to some derangement of the digestive organs,or to some want of attention to the laws of hygiene; it therefore should be an object to regulate these, and to put the patient on an immediate system of training, in place of giving the malady the phase of a false and illusory curability, or floundering with uncertainty on the outskirts of empiricism. No doubt, the medical profession have very justly laid it down as a rule that very painful affections, such as cancerous and cancroid diseases, and other chronic maladies, where the suffering is great, particularly if incurable, should be relieved by opiate prescriptions; but here nothing can be effected more than a palliation of the symptoms, and the injury inflicted by the opium cannot be put in the balance with the relief of pain which is obtained.

Surgical operations.—Operations, particularly those of a capital kind also claim the special asssistance of the somniferous poppy; and many of our best authorities recommend an opiate immediately after their performance, as it tends to sooth the patient and procure rest. Apparent quiet or rest, no doubt, follows this treatment in a considerable proportion of the cases, although by no means in all; but the problem remains to be solved—Does any injury ensue to the patient in regard to his subsequent recovery? This has not been clearly determined, or very thoroughly examined, simply because the practice is generally adopted; but it is worthy of a careful investigation, particularly as narcotism before the operation is somewhat in vogue. It probably does little subsequent harm in the large majority of cases; but I would consider it safer practice, except in special cases, to leave the *vis medicatrix* uninfluenced by its operation; as there are often in the system, or in the atmosphere around the patients, sufficient causes of inflammatory or other excitements without adding another to the list.

Tedious labour.—Opium is also frequently exhibited with the view of giving the patient rest, and modifying the pains during tedious labour. When the pains are false and the os uteri unaffected, and when there is reason to believe that the irritation is sympathetically induced by the state of the bowels or a diarrhœal tendency, rest and an opiate will often relieve the patient; and if the labour be in the first stage, with the os uteri little dilated, thick and rigid, and accompanied with little or no progress, an opiate occasionally does good, in as far as relief to the harassing pain is concerned, and to its subsequent return in a more regular manner. This, however, often cannot be effected without the exhibition of a large dose, which is by no means warranted under the circumstances, unless hemorrhage be present. In most cases the labour will go on more favourably by causing the patient to move about, or engage in some little temporary occupation, and by the exhibition of a purgative in certain cases, than by dosing her with opium or other drugs in the early stages, which are apt to engender false hopes of a speedy delivery, and consequent despondency if that be not the result.

Preparations of Opium.—When a certain and decided effect is required, such as the relief of severe pain, sleep, the checking of hemorrhage, or excessive secretions from the bowels or urinary organs, or the relaxation of spasm, the old preparations are most to be depended on; such as the tincture, solid or powdered opium. If an opiate sodorific be advisable, nothing is more certain than the *Pulv. Ipecac. c. Opio*, or a combination of the tincture with antimonial wine. The extract, and the acetum opii are by some writers thought to be superior, inasmuch as they are not so liable to produce nausea, headache, &c.; but probably these opinions have more weight attached to them than they deserve. The salts of morphia are also great favourites with many practitioners, as being more directly anodyne and less liable to excite disagreeable accompaniments and consequences. I cannot confirm this from my own experience to the usual extent of belief, when a dose sufficient to produce the proper effect has been exhibited; but I by no means intend to place this in opposition to the general opinions of the profession. As a regular anodyne to procure rest, when this is advisable, they may probably be superior; but no salt of morphia ought to be preferred to the usual preparations of opium, in the treatment of any formidable disease. For external use they have a decided superiority, when applied to a blistered surface deprived of its cuticle, as they are more free of extraneous matter. Opium is also of considerable value in checking the purgative operation of calomel and other preparations of mercury, when a constitutional effect is expected from this mineral; and for this purpose the form of pill is best adapted.

2. CHLOROFORM.

This powerful and intoxicating agent has attained in an amazingly short period an astonishing, if not a startling celebrity, not only in the profession, but also to an almost universal extent among the general community; and with the latter its powers are considered nearly miraculous; for their faith leads them to the conclusion that the most formidable operation can, by its means, be shorn of its terrors. As it would be unfair to throw out insinuations against its value without valid reasons, we shall here only say, that reasoning from the analogy of other rapid and somewhat enthusiastic beliefs, the chances against this universal admiration remaining permanent are very considerable. In order to examine fairly this engrossing and important subject, I shall arrange the inquiry as follows:—1. Does chloroform absolutely extinguish pain during operations? 2. Is its employment accompanied or followed by any dangers or disadvantages? 3. Ought it to be employed in all painful operations, or only in a limited number, characterized by their severity or some special peculiarity?

1. Generally speaking, patients under the influence of chloroform evince little apparent sensibility or consciousness of pain, in as far as this can be shown by the voice or external movements, and their terror or apprehensions seem to be altogether extinguished. They have somewhat the aspect of persons labouring under asphyxia or syncope, but it does not follow that the sudden contact of the knife will not arouse them into more or less consciousness of pain. What are our remedies for fainting or asphyxia; are they not stimulants or external inflictions by powerful physical agents? Will not a dash of cold water, or the application of ammonia to the nostrils, arouse a person from a fainting fit, and will not the same means, or a leathern thong, often awake the drunkard from his soporific unconsciousness? There can be no doubt that, in these instances, the pain of the infliction is exceedingly blunted, but it is not extinguished, for expressions of uneasiness, pain, or resistance, are in most cases evinced. If, however, you were afterwards to question the individuals subjected to this treatment, the large majority would recollect little or nothing about the matter. It is a notorious fact that men deeply intoxicated may have been guilty of numerous irregularites, have received dangerous wounds, or had fractured limbs, without remembering pain or any other circumstance connected with the accident; but that they were at the moment under a species of consciousness and pain there can be no doubt, although this was afterwards obliterated from the memory. An analogous effect is precisely what appears to take place from the employment of chloroform, of course varied according to the difference of the intoxicating agent. No doubt chloroform is superior to all others hitherto discovered in producing deep and rapid unconsciousness, and thus more speedily annihilating terror or apprehension of the ensuing operation; but this could be done also by alcohol or opium, were such a practice not accompanied with evil consequences.

2. It is undeniable that fatal consequences have now, in a very considerable number of cases, occurred after the employment of chloroform; and it is a problem worthy of sound and serious solution, to determine whether these result from a still imperfect knowledge of all the circumstances that require to be calculated for its safe exhibition, or whether its fatality in certain cases and in operative doses be an inherent or inseparable quality. Probably we have not data at present to determine this point satisfactorily, but we may attempt some approximation in the matter. As chloroform is only of recent introduction, it would be unfair to conclude that we know all the precautions for its safe exhibition; but assuredly the attentions of the most competent men have for several years been directed to this subject, and yet fatal termina-

tions, by no means thoroughly accounted for, have occurred in institutions distinguished for the scientific acquirements of their medical officers. Compare its employment with strychnia, hydrocyanic acid, arsenic, corrosive sublimate, or other virulent poisons. When the therapeutic or physiological rules for the exhibition of these substances are attended to, do fatal results sometimes occur notwithstanding every precaution? I answer no, and when accidents do occur, mistakes in almost every case have been committed. No doubt all this has been determined by the results of long experience, and it may be asserted that rules for the safe exhibition of chloroform may ultimately be discovered, as they have been in other cases. It is unfortunate, however, for this argument, that fatal results have happened repeatedly with what are considered moderate doses; besides, the channel of introduction is unusual and there may be something in this beyond an ordinary and safe application.

Again, did the defenders of its universal employment assert that the dose might be limited to an amount that would necessarily be safe; I reply that then it would not answer the purpose intended of annihilating apprehension and pain: it would act merely as an exhilirant like alcohol. The very nature of the influence required implies a full dose, and medicines which act primarily on the brain are the most intractable of all agents. The analogy, therefore, in its exhibition fails when compared with other dangerous remedies, for they can be exhibited in small doses and cautiously increased; whereas this must be pushed to an ultimatum, within a very limited period, if a due influence be expected. The fatal results that have occurred from its employment where no mistake occurred, and when given according to the ordinary rule, are greater, I venture to assert, than have happened with any other medicine in the materia medica; and its still prevailing popularity, not only in the profession but out of it, can be accounted for in no other way than this, that a very remote chance of death is compensated by a temporary relief from pain and terror. We hear much of the dangers of railway travelling and the frightful accidents that sometimes occur from collisions and other causes; and the press is, very justly, loud in its anathemas against every official that has violated the rules; even the directors have lately been considered responsible, and have been summoned to the bar of justice; but in this free and enlightened country, any man with a twinge of the toothache or an irritable ulcer may run his thousandth or ten thousandth risk without question by any legal authority. Notwithstanding this apparent discrepancy, I verily believe that the risk of railway accidents, arising solely from the carelessness of servants and officials, &c., and separated from those which occur from causes within the control of the passengers, are relatively the smaller of the two, if the millions that travel annually by this mode of transit are taken into account. I shall not, however, insist farther on this point, as statistics are wanting to bear upon one division of the calculation*.

3. In the consideration of this division I shall first advert to the employment of chloroform to annihilate or diminish the pains of *childbirth.* Some theorists object to its use on the score of its being an interference with the ordinations of the Almighty; that the female representatives of Eve should bring forth their children with sorrow, as a punishment for her disobedience. This objection is obviously a crotchet of some transcendental theologian, for disease and death were inflicted on man for the very same reason; hence if it be immorality in the one case to prescribe for the relief of pain, it would also be so in the other, which would be a glaring absurdity. I have objections to its indiscriminate use in ordinary labour, but rest them not on such chimeras. One chief argument is based on this, that, in all ordinary cases, labour goes on most successfully, and probablly also the after recovery, when it is merely watched but not interfered with until the concluding stage is in rapid progress. An attempt has no doubt been made to show that chloroform diminishes the pain, without interfering with the contractions of the uterus, and certainly it must be admitted that its influence in this respect is not very detrimental; but the evidence regarding this, and of its actually extinguishing the pain, is still *sub judice;* and who that knows anything of the continuance of a narcotic influence on the human frame for an hour or two in succession, would not anticipate headache, giddiness, confusion, and general *malaise* as a consequence? Such a state must form a considerable item, in balancing the two sides of the account. It cannot be so favourable to a speedy convalescence, and possibly may render the system more excitable, if the female be seized with any febrile or inflammatory attack. From all the foregoing considerations, it is tolerably plain that chloroform ought not to be exhibited indiscriminately or without a selection of cases, for the dangers accompanying its use in the present state of our knowledge are too great to warrant this. Such a risk ought only to be made for some important end, or, in other words, for the treatment of a grave or serious case. Its employment in the extraction of teeth, and for trifling operations or cauterizations, exhibits something like a puerile recklessness of consequences, and undoubtedly ought to be abandoned. In grave or capital operations, however, such as lithotomy, some cases of lithotrity, amputations of the thigh and large joints, excisions of a large size, ligature of important arteries or extensive and severe

---

* In a paper read by F. G. P. Neison, Esq. at the Statistical Society, he has shown that in 1851, the number killed by railway accidents was 1 in 2½ millions, from all causes. He also shows that the per centage of deaths beyond the control of companies is 56·84, and from those under their control 43·16. By calculation Mr. Neison deduces the conclusion that if a person were to travel 12 hours per diem, at the rate of 20 miles an hour, for each of the 365 days in the year, he would be killed by an accident in 456 years. *Athenæum, 30th April,* 1853.

cauterizations, the diminution or blunting of pain, and the quiet of the patient are so important results, that there can be no question between the risk and the advantages. In dislocations also of the larger joints, such as those of the hip and shoulder, the rexalation of the muscles, the diminution of pain and the lessened resistance are most important advantages, and fully warrant its employment, particularly in the former; for those of the shoulder, when recent, and occuring in feeble and relaxed subjects, are reducible with comparatively little force. In obstetrical practice it may also prove a useful agent, as, for example, in the operation of turning and in some instrumental cases. It might possibly also be, to a certain extent, a safeguard, were a proper apparatus, in place of a folded handkerchief or other similar appliance employed; for it is not improbable that something like asphyxia might be produced by the sudden inspiration of a considerable quantity of its vapour, little diluted with atmospheric air. Moreover, the state of the brain and organs of the chest ought always to be carefully examined previous to its exhibition. With regard to its exhibition in the cure of diseases such as insanity, tetanic or other diseases, no positive opinion can at present be given, as its employment is still in the experimental stage.

3. Wine and Alcohol.

Wine and other fermented liquors have long been employed in medicine as well as in dietetics, and at no period has the faith of the profession, as an enlightened body, ever been mystified into the belief, that though injurious and productive of disease when used immoderately, they are not highly valuable as remedies in the treatment of many diseases. Like other narcotics, when used in large quantities or doses, they cause subsequent unpleasant symptoms, such as thirst, nausea, headache, and other disagreeable feelings; but they differ from all the rest in their capability of carrying on the machinery of life for a certain period, and in supplementing the system with nutriment under circumstances very grave and depressing; and where ordinary alimentary matters would be utterly powerless. Hence the value of wine or alcohol in a certain class of diseases that have a peculiar adynamic or depressing effect on the vital organs. In the treatment of typhus they are unquestionably highly important agents, but to be useful they must be employed with knowledge and discretion. In young subjects they are seldom required, as symptoms of great prostration are not so frequent in them as in adults, nor is the disease so fatal, and when exhibited, wine ought always to be the form, as diluted alcohol is too exciting to their tender frames; and even that is only required in the smallest proportion of cases, and in the latter stages, when the pulse is weak and the strength and heat greatly diminished. In adults wine is necessary in a large proportion of protracted cases, except those where the symptoms are very mild. In persons, however, verging on the decline of life, particularly those who have been accustomed to live freely, wine can rarely be dispensed with. In such cases, the patient ought to be watched with special care, for if the strength be allowed to sink, it is with great difficulty brought up to its former state. Individuals who have been positively intemperate, ought to receive a portion of wine from the commencement of the disease; for if this be withheld, a kind of delirium tremens sometimes makes an early appearance, and complicates the case very materially. A similar rule applies to those whose constitutions have been broken down or become cachectic from any cause, for otherwise the strength is soon prostrated. Many symptoms have been designated by authors as indications for the use of wine; such as the state of the pulse, the tongue, the peculiar delirium, the subsultus, the prostration, the action of the heart, &c.; but the state of the circulation as indicated by the pulse, and symptoms of commencing prostration are the most to be relied on. As a general rule, wine is the best form for administration, as it is less exciting and intoxicating than alcohol; but in certain cases of great prostration of strength, ardent spirits have a more powerful effect, and may be substituted for it when sufficiently diluted. The wine best suited for the treatment, according to my experience, is sherry; as its strength—less liability to adulteration and acidity, although not always unexceptionable in these respects—is more to be depended on than port, or the French and German wines. Ale and porter, although inferior to wine, from the uncertainty of their alcoholic proportions, &c., may, in their absence or for other reasons, be employed as substitutes. It may be asked, why wine is here recommended as being indispensable in the treatment of many cases of typhus, while opium is objected to from its influence on the brain? Although both of these agents operate on the brain, alcohol never produces the same torpor and tendency to coma as opium; it is, moreover, more stimulating and nutritive, and may in this way tend to support the machinery of life until a crisis ensues; and if we view typhus as being caused by the introduction of a poisonous and depressing agent into the blood, the necessity for supporting the circulation, until this poison has been eliminated, may readily be admitted. In other regular febrile diseases, such as small-pox, scarlet fever, measles, &c., a similar mode of treatment must be adopted; also in typhoid cases, where the pulse is weak, and there is prostration of strength; to be modified or regulated according to the complications which supervene. In sloughing after operations or injuries, where there is a copious and debilitating discharge of pus, wine or some alcoholic stimulus is often of great service; although some writers and practitioners are of opinion that animal food to a considerable amount ought to be preferred. In such affections there is generally more or less symptomatic fever, accompanied with a corresponding weakness in the digestive functions; it is therefore not probable that animal food, in the form of muscular fibre, will be easily dissolved in the stomach in such cases, particularly if the texture be hard, as often happens with beef-steaks, a favourite prescription of many practitioners. In such cases a moderate allowance of wine, with beef tea, farinaceous substances, and a little solid animal food or fish will be found more suitable. When severe accidents occur in drunkards, or those regularly addicted to intemperance, wine, or what answers better, ardent spirits, ought to be exhibited from the commencement, for without the usual stimulus, delirium tremens is apt to occur—always a dangerous complication. Wine is also indispensable in supporting the strength and prolonging life in all chronic maladies that generally prove fatal, such as phthisis, cancer, &c.; and also in those which, being not necessarily fatal, are accompanied with much weakness and emaciation. Indeed, in the last stages of almost all diseases, of whatever character originally, the profession have sanctioned the use of wine as our only remaining resource.

IV. *Case of Diarrhœa Adiposa, with Observations.* By JEFFERY A. MARSTON, Esq. Newcastle.

B. R——, aged 35, labourer, of bilious temperament and middle stature, with a fatty frame, but a very sallow and emaciated face—came under treatment November, 1852. He complained chiefly of general debility, and a dull pain, accompanied by a creeping sensation, as if of a live animal, along the inferior part of epigastrium to left side, and round the back to the right hypochondrium. He had also frequent purging of large quantities of a very peculiar fatty-looking substance, but in the intervals his bowels were rather sluggish, when purgatives and mercurials appeared to give him some relief, but always augmented the discharge of this fatty matter. Some time back he had suffered from a dull aching pain in the right hypochondrium and back, extending upwards occasionally to the right shoulder. These symptoms had been gradually coming on for ten or eleven months, without apparent cause. The respiration was slow and passive, but no pulmonary disease could be detected. Heart's action was feeble, and impulse scarcely perceptible, yet no organic lesion was present, nor had he experienced dyspnœa or palpitation. There was no tenderness, swelling, or tumour anywhere, except a slight enlargement of the liver. His appetite was good, and he had a great desire for saccharine matters, fat meat, and hydro-carbons generally. Urine was passed in abnormal quantity, pale in colour, with very slight reaction on litmus: sp. gr. 1·030: under the microscope it presented a few epithelial scales, and a number of oil globules; on evaporating a portion and treating it with ether, these globules were dissolved;—there was less than a normal amount of urea and lithic acid, and no albumen; but Trommer's test, yeast, and oxide of silver indicated the presence of sugar, and the skin was harsh and dry, though he did not complain at all of these diabetic symptoms, *all* of which disappeared some time before death. Tongue was slightly furred; gums and inside of lips were pale and flabby; pulse 100, but it varied during treatment from 90 to 120. No cancer, phthisis, or cardiac affection could be traced in any of his family, which had been generally healthy.

The matters passed from the bowels presented a very fatty, tenacious, and peculiarly slimy appearance, deficient in bile, and altogether different from fæces; on raising a portion on the point of a knife it appeared in greasy masses; under the microscope numerous epithelial scales, with mucus, and a substance laden with oil globules, in every respect similar to fat, were observed: their fatty nature was rendered more evident by their being soluble in ether, and with liq. potassæ forming a semi-opaque gelatinous mass exactly resembling soft soap.

Now, the questions as to the *origo mali* in this case were—Was the liver affected with chronic inflammation or enlarged by engorgement? Did the fault rest with the stomach, pancreas, or kidneys, or was it a case of mal-assimilation and degeneration of the tissues generally? I confess it baffled my attempts at diagnosis. He had already been under medical treatment for the last 6 or 8 months, during which he had taken mercury and opium, been leeched, blistered, &c. without marked benefit. I advised that he should abstain from farinaceous and saccharine articles of food. Diaphoretics succeeded, though with difficulty, in producing diaphoresis; the sweat had no acid reaction on litmus. Olive oil, instead of being beneficial, only increased the discharge of fatty matter, and deranged the stomach. Purgatives, mercurials, counter-irritants, with small doses of iodide of potassium and ung. iodin. to region of liver, and a variety of other remedies failing to produce relief, at last all medical treatment was discontinued. His appetite continued good, but the adipose diarrhœa (4 or 5 stools per diem upon the average) continuing, he gradually sank, and died apparently from asthenia, after having been under medical treatment altogether 13 to 14 months. Towards the last he was ordered porter and beef tea, with opium, to support his strength and relieve irritability. The urine was examined from time to time, and the quantity of sugar was found gradually to decrease, and ultimately to disappear altogether: but there were still present the oil globules and fatty epithelium. I fancied that the symptoms were somewhat mitigated by careful abstinence from farinaceous articles of diet.

In consequence of the patient's residing at a distance of 6 miles, I could not watch the case so closely as I desired.

Post Mortem Examination.—General appearance of body sallow and emaciated; face, tongue, and lips, flabby and anæmic.

Head.—Brain and its membranes healthy, and no abnormal effusion into ventricles.

Thorax.—Old pleuritic adhesions on both sides. Lungs gave a healthy crepitus, contained no tubercles, but were somewhat doughy and greasy to the feel; pericardium quite healthy; heart dilated and flabby; walls of ventricles collapsing, and becoming perfectly flat, and though not presenting the true fatty degeneration of the sarcal elements, yet there was a deposition of fat intimately amid its muscular fibres.

Abdomen.—No adhesions of peritoneum; the sub-peritoneal fat was abundant. Liver slightly enlarged, and presented the fatty greasy structure of a phthisical subject. Gall bladder full; ducts quite patent. Kidneys, particularly the left, enlarged and fatty. Duodenum quite healthy, but the head of pancreas appeared to be converted into a hard schirroid tumour, which did not press upon the ductus communis choledochus, as in most of the similar recorded cases, whilst the body and other parts of gland were atrophied, and its duct was found perfectly obliterated and degenerated into an impervious cord. This state of the pancreas was, I presume, the most important of the post mortem appearances. The examination might have been performed more minutely, but for the prejudices of the friends.

Observations.—This case is a peculiar one. Its physiological bearing is very important, particularly at the present time, when many of our leading organic chemists and physiologists are debating upon the function of the pancreas. It is a matter of great difficulty to reconcile the conflicting statements made regarding the glandular system generally, and much of the discrepancy and difficulty appears in some measure to have arisen, from physiologists having pursued a too systematic and material course of reasoning. There can be no doubt, that the rapid strides which organic chemistry has recently made, have opened to us a wider field of investigation, and thrown great light upon many obscure points, yet there can be no question also, that the functions of the animal machine, guided and ruled by vital forces, differ materially from the laboratory of the chemist. That the pancreas does exert an important influence in the animal economy is obvious from its size, situation, and permanent duct. Observing the stages of development of this organ in different animals, we notice that it is much larger in herbivora than in carnivora, and that there is a correspondence (amid the latter class), between the development of the organ on the one hand, and the ingestion of fatty material on the other. In its minute anatomy it is almost identical with the salivary glands, and its secretion resembles very closely the saliva; according to Leuret and Lassaigne, its fluid has an alkaline reaction. From the experiments of Bouchardat and

Sandras, made upon birds, it appears that the pancreatic juice exerts a specific influence upon starch granules, dissolving them; and if albumen be present in the secretion, as is generally stated by physiologists (but denied by Blondlot), then there can be no doubt that its action upon amylaceous matters is analogous to that of the saliva, in dissolving them, and producing therefrom dextrine and grape sugar; but these experiments left open the question whether the pancreatic secretion, or the secretion of the duodenal mucous membrane, had the greater share in the function. It appears to be generally settled that the digestion of amylaceous matters is accomplished by the action of the salivary and pancreatic secretions, and it is probable that the unassimilated portion of this form of nonazotized food passing on through the small intestines, gives rise to the lactic and acetic acid fermentation in the cœcum, which according to Blondlot is there produced by the decomposition of the nonazotized ingredients of food. Tiedemann and Gmelin have also proved that the contents of the cœcum are highly acid, even in animals that consume no food capable of undergoing the lactic or acetic acid fermentation; hence they concluded that the secretion of the intestine is itself acid. This may be so, but from the great development of the cœcum in the herbivora, we may, I conceive, fairly deduce (in the absence of experiment), that the acid of that intestine does, in some degree at least, depend upon the decomposition of the amylaceous ingesta; for from the experiments of Bernard, Professor Thomson, and Plattner, the bile does not prevent either the formation of sugar, or its conversion into lactic or acetic acids. It appears, then, that some of the sugar produced by the action of the salivary and pancreatic glands, does undergo the lactic or acetic acid fermentation in the cœcum, particularly as there is generally a corresponding amount of development between the former organ and that intestine. As regards the other part of the sugar existing in the duodenum, it would appear, from H. Meckel's experiments, that it is converted into fat by the action of the bile; for he found that bile, acting upon grape sugar with the aid of a gentle heat, converts it into fat.

Thus far the function of the pancreas, in primarily preparing amylaceous matters for assimilation and secondary decomposition, appears pretty plain; but it has long been presumed that the pancreatic juice exercises some influence upon the digestion of fatty ingesta, and it has been generally stated, that its action on fatty matter gives rise to a minute division and suspension of its molecules, something analogous to an emulsion; and Bernard goes farther than this, and asserts, that its direct function is to separate fatty ingesta into their proximate elements, as butyric acid, &c. and glycerine.

Mialhe, adopting Bernard's views, explains its action upon the principle of fermentation. More recently another set of physiologists, of whom Frerichs and Lenz appear to be the most prominent, have published a series of experiments to prove that its absence in the intestine does not prevent the digestion and assimilation of fat. They experimented upon cats, and found the usual amount of fatty matter in the chyle, after ligature of the pancreatic duct. Here, then, exists a division between two leading sets of physiologists; for Bernard still adheres to his views. The question comes, does this case in any way fill up the gap? It has been advanced by Bouchardat and Sandras, that the free alkali of the juice, or serum of the blood, would be sufficient to dissolve the fat; and adopting Plattner's theory,* the soda of the bile may be almost vicarious of the action of the pancreatic juice, in separating the fatty ingesta by saponification with its acids; but whether this could continue long is not evident, and what appears to be the real root of the question is, whether, under long continuance, this would not be incompatible with existence. In the case before us, it is possible that the choleate of soda of the bile, and the alkalis of the serum did supply an alkali to the fat, thus saponifying it, and that the choleic acid, if Plattner's views be correct, taking albumen as its base, the resulting compound, which is the product of so highly an organized gland as the liver, on the one hand, and the chemical and antiseptic action of the gastric secretion, which is doubtless itself not a mere chemical combination, but a definite semi-organized material, on the other, might give rise to the fatty albuminous molecular base of the chyle; but that this continuing, these alkalis were not only insufficient in quantity to the digestion of the fatty ingesta, but an imperfectly organized material was formed, from which an imperfect chyle resulted.

The presence of sugar in the urine in this case is difficult of explanation; but be it remarked that this was a transitory symptom, existing most when the patient partook largely of amylaceous matters, which are easily capable of being resolved into sugar, and ultimately ceasing altogether long prior to death. It might be that a larger than normal amount of fatty matter was presented to and absorbed by the tributary branches of the vena porta, and that through the intermediate action of the liver (if Bernard's views be correct) this was resolved into sugar and carried by the hepatic vein into the general circulation; and, being more than normal in quantity, did not altogether undergo decomposition in the lungs (as it is conceived to do), but was excreted by the kidneys.

---

* To Verdieul and Plattner we are indebted for presenting to us bile as a combination of two simple proximate principles, viz. choleic acid and chloresterine, which choleic acid appears to be in union with soda. Plattner's view shortly is this, that the bile being mixed with the chyme, the choleate of soda undergoes decomposition; the soda is set free, and the choleic acid, taking the albumen, forms a compound insoluble in water, hydrochloric acid and alcohol, but soluble in alkaline carbonates and acetic acid, both of which are present upon the pyloric side of the stomach. Hence the choleate of albumen, traversing the small intestines in a soluble form, is taken up by the lacteals of the villi.

Again the deposit of fatty matter in the viscera generally may admit of a similar explanation; for I apprehend we must regard the fatty degeneration of the liver not as a primary affection, but as a secondary disease, resulting from the actual deposition of fat from the blood, it being found in a similar condition in almost all diseases, attended by much emaciation. Perhaps the fatty ingesta in this case, not having been subjected to the vital and chemical action of the pancreatic secretion, had never reached a sufficiently organized state to undergo the necessary changes, prior to assimilation or secondary combustion.

Looking at the case in all its bearings, it certainly appears to support Bernard's views, which I cannot consider entirely overthrown by the experiments before quoted. We may, I apprehend, fairly conclude from this case, that the pancreas does aid in the digestion of starchy matters, and that it does in some way prepare the fatty ingesta for absorption, and it supplies the gap in the experiments of Bouchardat and Sandras, as to whether the pancreatic or duodenal secretion had the greater share in the digestion of starch; for here the duodenum was apparently quite healthy, and the head of the pancreas alone involved by a malignant disease, differing from the cases before recorded. These I find to be—a case of diarrhœa adiposa under Dr. Elliotson, which recovered under the administration of olive oil, a similar case met with by Mr. Lloyd, and three such cases seen by Dr. Bright. The results of post mortem examinations in all the fatal cases, disclosed schirrous disease involving the pancreas and duodenum. Surely this points to the pancreas as discharging a function having direct influence upon the digestion and assimilation of fatty matters. In a case of malignant disease of the pancreas, all medical treatment would be abortive; but supposing its function to be suspended by a non-malignant tumour, &c. we have yet to learn what would be the proper treatment.

V. *On Excision of the Shoulder Joint.* By M. S. Buchanan, M.D., Professor of Anatomy in the Andersonian University, Glasgow.

It is melancholy to reflect on the vast number of patients afflicted with caries of the bones of the shoulder joint, who have been left to their fate, in consequence of the conviction on the minds of surgeons, that this disease was irremediable. Amputation through this joint, in such cases, has no doubt been sometimes had recourse to, but how frequently has death been the result of this terrible exhibition of radically destructive surgery? The symptoms, diagnosis, and cure of morbus coxarius and white swelling of the knee, have been most minutely detailed by surgical authorities, and their pathology demonstrated with microscopic accuracy, as if those were the only joints liable to disease. This monopoly of observation and engrossment of attention to these articulations, have in my opinion prevented that investigation of the diseases of similar structures, in other parts of the body, which their great importance urgently demands. From my experience both in hospital and in private practice, I am convinced that synovitis in all its varieties, ulceration of the cartilages, and caries of the bones of the shoulder joint, are as constant in their occurrence, and their symptoms even more severe and dangerous than those of similar affections in any other part of the body. This cannot create astonishment, when we consider the complicated structure of this joint, its mobility so varied and extensive, and its exposure to injury such as to render its dislocation of every-day occurrence. One has to regret also, that the primary stage of synovitis of this joint is too apt to be confounded with rheumatism, and instead of perfect rest of the limb being insisted on, as the main remedy, the unfortunate patient is told to *move* it freely, to *rub*, *beat*, *pinch*, and even *shampoo* it with all his might. Can it be matter of wonder, after such rude and barbarous torture, that the destructive process rapidly advances, and abscesses make their appearance; that on their being discharged, cartilaginous ulceration becomes disclosed, and at last that the whole apparatus of the joint is found in a state of caries. Our prescriptions of leeching, cupping, and all the host of counter irritants are of little use, so long as *friction* of the articular surfaces, the only parts affected, is allowed. Sooner might the guard of a rail waggon try to extinguish the burning of an axle in its onward course by the liberal use of water, instead of bringing it to a stand still, than the surgeon attempt to subdue synovitis, while friction of the delicate inflamed serous membrane of the joint is thus recklessly enjoined.

In my former communication on the hip joint, I have urged this practice of *perfect rest* so forcibly on the attention of my junior professional brethren, that I need not say more on the subject. Notwithstanding all our best directed efforts, the symptoms occasionally, I am sorry to remark, instead of receding and terminating favourably, or advancing to anchylosis, make such rapid progress, and hectic fever, with all its dread concomitants, proves so alarming, that operative surgery becomes our *dernier resort*.

If the following cases of extensive caries of the bones of the shoulder joint, in which I performed the operation of excision with a success beyond my most sanguine anticipation, shall bring conviction home to the minds of the profession, as to the value of this truly beautiful and simple surgical operation, my object shall be gained. Conservative surgery has all along been my hobby, and although I have retired for several years from the more active duties of my profession, both public and private, I hope to see the period, when, guillotining of the limbs, in all cases of caries of the joints, by the operation called amputation, shall be completely superseded by the more safe and scientific operation of excision.

Case 1*st.*—Catherine M'Daid, aged 27, Scotch, catholic, married, factory worker, June 3, 1850. Fourteen months ago began to suffer from gnawing pain in the left shoulder joint, induced as she supposed by carrying heavy burdens of wet clothes; the pain gradually increased, and was aggravated by the movement of the articulation. Four weeks from the first attack the shoulder was observed to be fuller than its fellow, this gradually increased, and extended along upper half of humerus, till seven months ago, when a large abscess burst over upper and inner aspect of arm. Since that time, several abscesses have formed, over upper half of humerus: these have left openings through which pus has continued to be discharged in considerable quantity. Has been unable to move the limb for the last six months. On examining the upper half of arm, five sinuses are observed; through these, the probe can be passed upwards, in contact with the head of the humerus, which is found in a state of caries. Within the last three months, she has become much emaciated, has profuse night sweats, and diarrhœa of several days' continuance. Catamenia absent for eight months. *Chalk mixture with catechu. Four ounces wine daily.*

6*th.*—Was shown to a consultation, when excision of the shoulder joint was unanimously recommended; an opinion was expressed, that if the shaft of the humerus was found extensively diseased, amputation at the shoulder joint should be had recourse to.

7*th.*—To day the operation was performed in the following manner:—The patient having been placed on the table on her right side and brought under the influence of chloroform, a semilunar incision, having its convexity looking downwards, was made across the front of the shoulder, extending from the free border of the deltoid muscle, about an inch below the clavicle, terminating towards its posterior edge, at the same distance from the spine of the scapula. The knife was now carried down through the whole substance of the muscle, and by freely dissecting this upwards, along with the flap of integument, the capsule of the joint and the rotator tendons were exposed. These having been divided perpendicularly with the bistoury, the head of the bone was with ease disarticulated, and the saw applied from within outwards, to the *surgical* neck, both tuberosities having been found in a caries condition. On examination, the glenoid cavity was also found in great part denuded of cartilage, thus requiring its total removal with the gouge. The main trunk of the posterior circumflex artery, with two of its branches, which were necessarily cut in the dissection of the deltoid flap, alone required ligatures. The flap being now brought down into its normal position, and secured by a few stitches covered with water dressing, and oiled silk, was retained by a proper bandage.

It would be tedious to trouble the reader with the minute reports which are given in the house journal of the progress of this case: suffice it to say, that by the 30th of June the wound had cicatrized, the discharge from two or three pin-point openings was trifling, the pain rapidly subsided soon after the operation, as well as the hectic symptoms, and so satisfactory was her state that on the 27th July she was dismissed cured.

July 14*th*, 1853.—I have seen this woman to-day, she is *fat, healthy*, and so useful, as to be an able servant in one of our largest public institutions.

Case 2d.—John Kay, aged 38, married, labourer, January 27th, 1851. Patient was in the house in August last under treatment for synovitis of the right shoulder joint, and after a residence of six weeks was dismissed little improved. During the greater part of his stay, he had his arm put up as for fractured clavicle; the parts in the vicinity of the joint were repeatedly cupped; issues were also formed over affected part, by means of both the actual and potential cautery. The iodide of potassium was given internally. Shortly before dismissal, a small abscess formed on outer part of arm, about six inches below shoulder joint. From this a small quantity of pus was evacuated by an incision, after which it soon cicatrized. A few days after dismissal the above abscess was reopened, and from that time it has not ceased to discharge a small quantity of fluid, which at present has the appearance of synovia mixed with pus. On passing a probe upwards into the opening it is found to communicate with the joint, but does not come in contact with carious bone. Acute pain is felt on impinging the head of the bone against the glenoid cavity. Appetite much impaired, sleeps little, pulse 110 feeble, perspires profusely, bowels regular.

January, 31*st.*—To-day, by advice of consultation, the operation of excision was performed exactly in the manner before described. In this case the disease had also extended to the surgical head of the bone, on examination of which, there was found a small hole leading into the cancellous structure, and a loose portion of bone about the size of a filbert was remarked lying in the centre, also in the same diseased condition.

February 27*th.*—Wound of shoulder joint now nearly well; space between scapula and humerus so much filled up with ossific deposit, that rotundity of deltoid muscle seems nearly the same as the opposite side. General health greatly improved, sleeps nine hours daily, pulse 84.

March 15*th.*—Wounds around shoulder joint now cicatrized to a point, no pain remains. General health much improved, appetite good, sleeps well, functions natural, expresses himself as in every respect comfortable, wishes to go home, and is therefore dismissed cured.

He called back every week, for some months, to exhibit the progress of the cure, which was most satisfactory; and so useful had the arm become, after a few months, that he was able to resume work.

Remarks.—The above cases present so many points of similarity, both as to their history and the operative procedure required, that the few remarks which I deem it necessary to make may with propriety be applied to both. In hospital, unfortunately, we seldom have the opportunity of seeing the inflammation of the synovial membrane in its primary stage: it is only after being treated for weeks or months privately, and, as in both the above cases, after abscesses have formed and been discharged, that as hospital surgeons our aid is invoked.

If the patient is young and hectic has not appeared, even with such untoward local symptoms, I think we ought not to despair of anchylosis, and our duty is to give the unfortunate patient the chance of this, by proper bandaging and perfect rest of the affected limb, supporting the strength with nourishing diet and cordials. If in spite of all our attempts, the discharges increase, the pulse flags, diarrhœa and profuse night sweats, and other untoward symptoms appear, then no time is to be lost. Although the probe cannot be brought into contact with rough bone, as in one of the above cases, still the nature of the discharge from the joint, partly purulent and partly synovial, the *constant acute gnawing* pain, aggravated by motion or the least pressure of the articular surfaces, can leave little doubt on the mind, that caries of the articulation has taken place. Indeed, whenever, in such cases, I remark pain on pressure of a distant part, as the elbow upwards against the scapula, I always figure to myself, as it were, a mass of needle zeolite, impinging on an inflamed glenoid cavity, from which the patient starts as instinctively, as if the scarificator of a cupping instrument were applied to the skin, over the deltoid muscle, leaving no doubt as to the state of the articulation. In both the above cases the disease had extended to the surgical neck of the bone, thus necessitating the removal of the tuberosities, even as far down as the insertion of the teres major muscle. It is of great consequence if we could spare these important osseous processes, attaching as they do the four great rotator tendons; still, if there is the least doubt as to the soundness of the surgical head of the bone, we ought not to hesitate in removing it. I have long ago laid it down as an axiom in the surgery of diseased joints, that no part coated with cartilage ought to remain in performing the operation of excision, and I have been led to adopt this practice, from the tedious fistulae which I have experienced to result, from its neglect, in several cases of excision of the elbow joint. The cure after the operation will be much hastened, and the patient's sufferings alleviated, by support being given to the limb; indeed, the recumbent posture I have found indispensable, not only during the time of dressing the wound, but also during the whole period of treatment. The weight of the limb is such, when thus nearly freed from its attachments to the body, that the osseous surfaces are dragged as it were asunder, and the connecting medium destroyed, instead of which, the bones sawn ought to be kept as carefully and firmly in apposition, as in a case of compound fracture. By this means alone, I am convinced, will osseous union be accomplished, and anchylosis at last take place.

VI. *On the Treatment of Oxaluria.* By JAMES GRAY, M.D., L.R.C.S.E., Glasgow.

THE terms oxaluria and oxalic diathesis have been applied to that morbid state of the digestive and assimilative functions, characterized by the formation of oxalic acid, and its elimination from the blood by the kidneys, in combination with lime.

Oxaluria was at one time supposed to be of very rare occurrence, but Dr. G. Bird has recently shown that it is to be met with very frequently, particularly amongst the inhabitants of large and populous cities. It is the generally received opinion that both the octohedral and dumb-bell crystals are *true oxalate* of lime. Recent experiments, however, tend to show that the dumb-bell crystals are not *oxalate*, but *oxalurate* of lime. I am inclined to think the latter view the correct one, from the fact that the same therapeutic agent does not act equally in both cases, as the following illustrations may testify. I may add that the chief object of these cases is to show the importance of microscopical examination of the urine, and the good effects resulting from the use of nitrate of silver in those cases where the dumb-bell crystals are present.

Case I.—James Fleck, aged 48, of a melancholic temperament, married, by trade a cooper; came under my care on the 3d of August, 1851, complaining of intense pain in the epigastric region, so severe as to render him wholly unfit for his work. He attributes the first of his present illness to a debauch about three years ago, up to which time his general health had been good.

When I saw him he had a very haggard and emaciated appearance; skin of a greenish-yellow colour, tongue red, pulse regular but weak. Complains of excruciating pain in the region of the stomach, both before and after taking food. This pain comes on in paroxysms, and is frequently attended with vomiting; the matter vomited has a dark grumous appearance. During the paroxysm the skin is cold and bedewed with moisture. Bowels confined, fæces of a dark colour; has occasional pains over the renal region. *To take a mild aperient, and a wine glassful of calumba infusion thrice daily.*

5th.—No change for the better, pain still as severe. Is greatly depressed, and under the impression that he is consumptive and dying. This morning's urine has a dark amber colour, acid, Sp. Gr. 1·030, contains a large excess of urea; under the microscope, numerous octohedral crystals of the oxalate of lime, mixed with epithelial scales in great numbers, are visible. *To have a nutritious diet, to abstain from spirituous liquors, to sponge the body every morning with tepid water, and to take a tea spoonful of the following mixture every six hours:—Tincture of calumba, ℥ij; nitric acid and muriatic acid āā ʒss.*

8*th.*—Greatly improved in appearance. He is now quite free from pain, is in better spirits, and takes his food with greater relish.

He went to the country shortly after this, and returned to his work about the beginning of November perfectly well.

On the 15th of February following, he returned to me with all his former symptoms aggravated; which he attributed to irregularity in diet and exposure to cold. On examining the urine it was found to contain the oxalate of lime in dumb-bell crystals.

He was ordered to take a mild aperient, and the acidulated tincture of calumba as before.

18*th February.*—Bowels freely moved, no improvement, passed a very bad night. *Ten drops wine of colchicum every six hours, and ½ grain sulphate of zinc, night and morning.*

22*d.*—Much the same, is evidently weaker and more emaciated, can take no food, greatly depressed in spirits. *One grain nitrate of silver every six hours.*

24*th.*—Felt greatly relieved after taking the first dose of the nitrate of silver, is now improved in appearance. The paroxysms are less frequent and not so severe. This morning's urine contains the oxalate of lime in octohedral and dumb-bell crystals. *Continue the nitrate of silver in ½ grain doses; a tea spoonful of the acidulated tincture of calumba night and morning.*

March 3*d.*—Decidedly improved. The dumb-bell crystals have disappeared from the urine. *Omit the nitrate of silver and continue the mixture.*

April 10*th.*—No trace of the oxalate of lime in the urine. He feels quite well, and has again resumed his work.

On the 3d of December last, I was called to see him. I found him in bed, perfectly prostrated, with a small thready pulse, weak tremulous voice, skin cold and clammy, features contracted, countenance expressive of intense pain, low moaning, tossing of the arms, breathing slow, tongue white and coated. I learned that while at work this morning the pain had returned, and that he was induced by a fellow-workman to take two glasses of whisky, which increased the pain and brought on vomiting. *Sinapism to the epigastric region, warm drinks, and bottles of hot water round the body.*

The urine, on examination, was found to contain myriads of dumb-bell shaped crystals of the oxalate of lime, mixed with uric acid. *Nitrate of silver in grain doses every four hours.*

4th.—Pulse fuller, no decided improvement in the other symptoms.

7th.—Has improved greatly. The pain has now all but left him. *Continue the nitrate of silver in ½ grain doses three times a-day.*

On the 14th he went to the country, and returned to his work on the 27th. Up to this time he continues well.

Case II.—On the 29th of April, 1852, I was consulted by J. R., aged 23, of a nervous temperament. He has been ailing more or less for the last nine months. Complains of pain and difficulty in swallowing, harassing cough, with roughness at the upper part of the larynx. When the cough is severe, the expectoration is tinged with blood; no appetite, bowels constipated, great weakness and emaciation, tonsils enlarged, and fauces considerably inflamed, tongue slightly coated. Percussion elicits a normal sound over the whole chest.

A strong solution of the nitrate of silver was applied to the upper part of the larynx and fauces, and he was ordered a mild laxative.

30th.—The urine contains an excess of urea, and oxalate of lime in octohedral crystals. *A tea spoonful of the acidulated tincture of calumba three times a-day.*

He went to the country shortly after this, and returned about the beginning of June, so much improved as to be able to resume his duties. No trace of the oxalate could be detected after his return, and with the exception of a few days' confinement to his room from an attack of "*cynanche tonsillaris,*" he has since then enjoyed good health.

Case III.—J. M'Intosh, aged 25, ship cooper, came under my care on the 2d Jan. 1852. From his history it appears that when at Georgetown, Demerara, he was very irregular and intemperate in his habits, that on the voyage home he was attacked with sickness, vomiting, headache, and loss of appetite, by which he was greatly reduced in strength, and confined to his berth for the greater part of the voyage, and since his return on the 18th of November, 1851, he has been confined to bed.

Complains of great feebleness, and of daily becoming weaker. The countenance is wan, and expressive of great anxiety. Tongue coated posteriorly, red at the point and edges; has no desire for food, and what he does take is often rejected, bowels loose, severe spasmodic cough, respiratory murmur healthy; profuse perspiration, particularly at night, and after awakening from sleep; pulse 120, weak and small, heart's action normal, urine of a dark amber colour, density 1·035, contains oxalate of lime in octohedral crystals, with a large quantity of the urate of ammonia. *A mild nutritious diet, tepid sponging night and morning, a tea spoonful of the acidulated tincture of calumba every four hours.*

Under this course of treatment he continued to improve daily.

About the 1st of February he went for a few weeks to the country; on his return no trace of the oxalate of lime could be detected. Since then he has enjoyed good health.

Case IV.—John Anderson, aged 34, nervous temperament, by trade a cabinetmaker, consulted me on the 6th of July, 1852, for what he conceived to be an affection of the stomach. He informed me that about the middle of April preceding he began to lose his appetite, had slight pain in, and distention of the stomach, frequently accompanied by heartburn, palpitation of the heart, and pain in the loins. When he called on me in July these symptoms were considerably aggravated; his pulse was 84, strong and full, the slightest excitement caused palpitation of the heart, and severe headache. He has no appetite for food, which when taken causes pain in the stomach, flatulence, and sometimes vomiting. Bowels confined, urine of a pale yellow colour, Sp. Gr. 1·042, contains oxalate of lime in octohedral and dumb-bell shaped crystals; a small quantity of urate of ammonia and epithelial scales. *Acidulated tinct. of calumba every four hours, a grain of nitrate of silver night and morning, tepid bath, and to abstain from vegetable food.*

He continued this course of treatment for five weeks, when the oxalate of lime entirely disappeared from the urine, the Sp. Gr. fell to 1·020, and he felt quite well. Since then I have not seen him.

Case V.—On the 13th of January, 1853, I was consulted in the case of J. M., aged 43, melancholic temperament. From his history it appears that in January, 1852, he had an attack of jaundice, accompanied by vomiting and pain in the stomach. The jaundiced appearance disappeared about the beginning of April, the vomiting and pain in the stomach, however, continued, but in a modified degree; towards the end of April a small tumour made its appearance in the epigastric region. Up to this date he has been gradually getting weaker and more emaciated, and for several weeks back he has been unable to leave his bed.

When I first saw him his complexion was of a dark yellow hue, and emaciation very great. He complains of intense pain in the stomach, which comes on in paroxysms, and generally causes sickness and vomiting, after which he experiences partial relief; the matter ejected has a dark coffee colour. Tongue coated posteriorly, and red at the point; bowels confined; pulse 106, small and weak, breathing slow but regular; has occasionally a pain in the loins, and along the anterior and inner side of the thighs and legs. On examination I found a tumour extending from the scrobiculus cordis downwards, to the extent of five inches, and on either side of the linea alba three inches. For several nights back he has been very restless, and unable to procure sleep. This morning's urine has a dark brown colour, Sp. Gr. 1·038, it contains mucus, epithelial scales, urate of ammonia, and oxalate of lime in dumb-bell crystals. *Nitrate of silver in ½ grain doses every six hours, friction to the skin, and light nutritious food.*

19*th*.—Can now retain his food, looks more cheerful, the abdominal tumour is considerably reduced in size, the urine is not so high in colour or density, still contains oxalate of lime.

27*th*.—The abdominal tumour has entirely disappeared, which seems to have depended upon spasmodic contraction of the upper division of the rectus abdominis, feels stronger, and is able to take his food with relish.

February 14*th*.—The oxalate of lime has entirely disappeared, he is now able to take a little exercise. *Continue the nitrate of silver, night and morning.*

On the 22d he went to the country, where he still remains. When I last heard from him (on May 4th), his general health had greatly improved, and he felt nearly as strong as before his first illness.

Remarks.—1. From the history of these cases it will be observed that the most prominent symptoms were the epigastric pain, vomiting, and emaciation; indeed the emaciation in the first and last cases was so great as to resemble the emaciation in the last stage of schirrous pylorus. In all, but particularly in the first and last cases, the symptoms and appearances of poisoning by oxalic acid were well marked, which led me to examine the egesta for this poison, but I could detect none. In such cases as the preceding, guided solely by the symptoms, we would most certainly form an erroneous diagnosis; and here the value of microscopic, as well as chemical analysis of the urine, becomes apparent. The symptoms should not, however, in any case be undervalued; but when we can with certainty, and by a simple process, discover the cause which produces certain symptoms, we can with more confidence select the proper therapeutic agent. We, moreover, observe from these, that in all cases where the oxalate of lime is in octohedral crystals, the nitro-muriatic acid, combined with a vegetable tonic, will in most, if not all cases, effect a cure.

2. That in those cases where the crystals assume the dumb-bell form, nitrate of silver appears to be particularly serviceable.

3. That when both kinds of crystals are present, these medicines should be given alternately.

The internal use of nitrate of silver has been generally objected to, from the effect it produces on the skin. I have frequently given in repeated doses of one grain, as much as 60 grains, without producing any discolouration.

VII. *Case of Difficult Labour arising from Extensive Contraction of the Vagina and Os Tincæ.* By WILLIAM PRICHARD, M.D., Partick.

ON the evening of the 13th October, 1852, I was requested to visit Mrs. Branagan, aged 25, residing in Partick. I found her considerably emaciated, and suffering from occasional uterine pains, though not of an expulsive character. She mentioned to me that she had just completed her seventh month of pregnancy, and expressed much fear and anxiety about her state. I enjoined the recumbent posture, and ordered her an opiate.

October 14th.—Had a quiet night, bowels opened, urine passed freely. Uterine pains continue. *The opiate to be repeated.*

11 *o'Clock* P.M.—Since last visit has been suffering from severe expulsive pains at regular intervals; complains of debility and nausea. Pulse 120, skin hot, thirst urgent. When examined, *per vaginam*, the passage was found contracted from cicatrices, to such an extent as scarcely to allow the introduction of a finger. The os tincæ was very rigid and partly dilated, the cervix being bound to the posterior wall of the vagina, by a broad cartilaginous band. The head of the child was readily felt by the introduction of a finger into the anus. Expulsive pains continuing at regular intervals, without producing any dilatation, and the patient losing strength, I determined upon instrumental delivery, and requested the assistance of my friend Professor Pagan. A firm band, about two inches broad, perfectly undilatable, extended across the posterior wall of the pelvis. To this, what remained of the vaginal portion of the uterus (its anterior lip) was attached. Dr. Pagan introduced a finger into the rectum, and with a blunt pointed bistoury cut the band as deeply as safety would permit. Very little space was gained by this incision, and four others were made, two on either side of the pelvis. A considerable amount of blood escaped. In consequence of the attachment of the anterior wall of the cervix uteri to the cicatrices, comparatively little space was gained by these incisions, and Dr. Pagan determined, therefore, to slit up the anterior lip. Having done this, he was able to pass a couple of fingers into the vagina, and by them to guide the blades of the forceps along the sides of the child's head, when, applying very considerable extracting efforts, he fairly tore the head through the contracted vagina. The child, a female, was born alive. A little warm spirits and water were given the mother, and she was left at 4 A.M.

October 15th, 11 *o'Clock* A.M.—Has had some sleep. Pulse 120; skin moist; lochial discharge moderate; no thirst; has passed urine. Child well, and has taken some milk and water.

Evening.—Pulse 120; skin cool; tongue moist; ordered an opiate.

She continued to improve, although slowly, it being a month before she was able to be out of bed, and nearly another month before she was quite recovered. The incisions slowly healed, the vagina remaining much contracted. There was no secretion of milk.

On inquiring into the history of her previous confinement, I found that she had been delivered on 25th December, 1847, of a still-born child, after a severe labour of three days. The perineum had been lacerated, and she suffered great pain, and laboured under *stillicidium urinæ* for upwards of two months after her delivery. It is probable that there had been much sloughing of the vagina, which would necessarily be followed by the great contraction described as existing at the time of her second confinement.

Note by Dr. Pagan.—Since Dr. Prichard's case, one nearly similar occurred among the poor women attended from the hospital. The patient was in labour of her second child when seen by me, and believed herself to be between the sixth and seventh month of pregnancy. Upon introducing the finger within the orifice of the vagina, a perfectly undilatable falciform band extended entirely across the pelvis, merely permitting the introduction of the finger between this and the anterior wall of the pelvis. The breech of the child, which was presenting, and which was at first mistaken for the os and cervix uteri, was directed against this aperture, but even under vigorous pains no progress had been made in the dilatation of this preternatural band, during many hours' continuance. Free incisions were made, as in Dr. Prichard's case, and these permitted the expulsion of a still-born premature child. The patient made a perfectly good recovery.

This woman was delivered by the perforator, after being long in labour of her first child. She was the victim of a vesico-vaginal fistula, and no doubt the cartilaginous-like band, which occupied so large a space in the pelvis in her second labour, had replaced the natural structures destroyed by sloughing after her first.

VIII. *Case of Attempted Induction of Premature Labour, by means of the Hot and Cold Water Douche.* By ROBERT KIRKWOOD, Esq.

IN April, 1852, Dr. Pagan was called to see Sally ——, a strong healthy Irishwoman, of about 28 years of age, and rather below the average height. She was then in labour of her first child, and had been ill for nearly three days.

Upon examination it was discovered that the delay arose from the deformity of the pelvis; no part of the child's head had entered the brim, and a loop of the umbilical cord was found prolapsed and pulsating in the vagina. It was at once apparent that there existed very decided malformation of the pelvis; its form was irregular; it was unusually deep; and its capacity, alike at the brim, in the cavity, and at the outlet, was very appreciably diminished. The sacro-vertebral angle and the promontory of the sacrum jutted inwards considerably; the transverse rami of the pubis, instead of assuming their usual curved form, approached each other almost in straight lines, until they neared the pubic junction, when each ramus became bent at an angle upon itself, thus forming at the symphisis a wedge-like process or projection forward. The sacrum was straighter than usual, its curvature being lessened; the distance between the tuberosities of the ischium was less than normal, and the pubic arch was contracted and angular.

The deformity being too great to permit of delivery being effected, either by turning, with the hope of preserving the infant, or by means of the long forceps, Dr. Pagan proposed to perform craniotomy, but this the patient's friends, from religious scruples, refused to permit. On the following day, however, the child being no longer alive, they yielded their consent. At the time of the operation, not only was the cord (pulseless) in the vagina, but a hand and foot in addition were found protruding. These, as Professor Pagan stated at the time, as moveable parts within the uterus, had been acted upon by the uterine contractions, and pushed down at the sides of the pelvis, where there was space for them to descend, the head still remaining quite unengaged in the pelvis. The Professor stated that he had seen several similar cases; and believed it to be by no means a rare cause of prolapsus of moveable parts within the uterus, such as the hand, the foot, and the cord, by the side of the more prominent presenting part, when that part was obstructed in its progress from any cause whatever. The perforator was accordingly employed, and immediate attempts at extraction made with the crotchet and blunt hook; very great difficulty was experienced in accomplishing this stage of the operation.

Patient made an excellent recovery. Within a fortnight from the date of her delivery she walked without assistance to the hospital, a distance of more than half-a-mile, to express her gratitude for the kindness and attention bestowed upon her, and also to make the modest request, that a bottle which she had brought with her might be filled with some medicine which would prevent her from having any more children, "*for sure, yer honour, ye have had a hape o' throuble wi' me this time, and its meself would'nt like, plaze God, to be so bothersome to ye's again.*"

She was warned of the risk she would run if she again became pregnant, and advised should this occur to give information at the hospital, of the fact, at an early period of her pregnancy.

A day or two before Christmas of the same year, information was obtained that she was again with child. Her abdomen was then large, its parietes were loose, flabby, and loaded with fat;

the uterine tumour could be easily defined, the fundus being about mid-way between the pubis and umbilicus. On the right side of the mesial line, the pulsations of the fœtal heart were distinctly audible towards the upper portion of the uterine tumour. The uterus had risen almost entirely out of the pelvis, it being impossible to do more than merely touch its lips in an examination per vaginam.

In this instance two opinions could not exist as to the mode of practice which should be adopted in conducting the case. By the artificial induction of premature labour, at a more advanced period of pregnancy, the child might possibly be saved, while the mother would be exposed to comparatively little risk; but if the case were permitted to proceed uninterruptedly to the termination of the ordinary period of utero-gestation, not only would the danger to the mother be fearfully aggravated, but the child also would infallibly be lost. Owing to the great distortion of the pelvis, Dr. Pagan did not think it prudent to allow her to advance much beyond the end of the seventh month of her pregnancy, and accordingly in the beginning of April last, when, judging from all the data available, it seemed probable that she was approaching the middle of the eighth month, it was deemed advisable to make the attempt.

Some time previously several reports had appeared in British as well as in continental journals, of cases in which labour had been successfully induced, by directing alternate currents of hot, and cold water against the os uteri. As this method from these reports seemed to possess two decided advantages, safety and certainty, it was resolved to make trial of it; the object being to bring on labour by rousing the excito-motor action of the uterus in this manner, not by injecting water through the os uteri. The house in which the patient lived possessed few conveniences for performing the operation, in the mode described in the journals; besides it was so low in the ceiling that one could not stand erect in it, with his hat on. It was therefore impossible to get a fall of water of more than from three to four feet in height, or about one-third the height ordinarily employed. Under these circumstances, it was thought that the water might be injected quickly and forcibly, by means of a large-sized patent enema apparatus, the nozzle of which should be replaced by an elastic rectum tube. This method, though certainly of less easy application, seemed to possess advantages at least equal, if not superior to the others. If the induction of uterine action were dependent upon the shock communicated by the impinging of a current of water against the lips and neck of the womb; then it ought to follow more certainly by this method, in which, instead of a continuous flow, there would be a rapid succession of individual shocks, the two modes bearing somewhat the same relation to each other, that a charged Leyden jar bears to an active electro-magnetic apparatus. If, again, the uterus were excited to action by the force with which the current was thrown upon its lips, then this apparatus would be superior to the other, since it was possible with it to throw a stream of water to a greater distance than could be done with a tube of the same calibre communicating with a cistern of moderate size. None of the accounts which I have seen afford sufficient data for constructing the apparatus necessary for the operation, as commonly performed. Nothing is said of the capacity of the cistern, its diameter and depth; nor of the calibre of the conduit tube, nor of the diameter of the orifice at its free extremity; data upon which the kind and force of the current depend, and which must constitute important elements in the success of an operation. The internal diameter of the syringe employed in this case was not quite an inch, the stroke of the piston was between four and five inches; the educt tube was fully a quarter of an inch in diameter, and became contracted to about an eighth of an inch at its free extremity or orifice. With this apparatus, a jet of water could be made to impinge with considerable force, against a wall or other object eight or ten feet distant.

On the 3d April last, the day fixed upon for performing the operation, the patient's abdomen seemed almost as large as that of a woman nine months gone with child, soft, loaded with fat, and somewhat pendulous. The fundus uteri was about a hand's breadth or more above the umbilicus; the pulsations of the fœtal heart were heard most distinctly, a little way below and to the right of the umbilicus; the uterine or placental sound was loudest in the lowest part of the left side of the abdomen. In an examination per vaginam the cervix uteri was found very high up, short, thickened, soft, and cushion-like. Dr. Pagan, upon making an examination of the abdomen both by the hand and by auscultation, stated that the infant was not presenting naturally. Indeed, the round and moveable head of the infant could be felt directed towards the right hypochondrium. Presentation by the inferior of the long diameter of the child was diagnosed, and this in the event was found correct.

The necessary arrangements being completed, the operation was commenced by injecting water at a temp. of 112 deg. Fahrenheit for fifteen minutes; Dr. P. directing the stream against the os uteri, while his assistant Mr. J. Pearson and myself wrought in rotation at the syringe. Cold water was then substituted, and the current kept up in the same manner for twelve minutes. After the lapse of forty-five minutes the operation was again repeated. As patient was clamorous for some medicine which might assist in bringing on labour, a drachm of compound tincture of gentian in water was given as a placebo. She was seen about six hours after: she was then, and had been, free from any feeling of uneasiness or pain. The operation was again repeated, and a drachm of compd. tinct. of gentian administered.

4th April, 9 *o'Clock* A.M.—Patient rested well during the night;

continues free from pain; has breakfasted with her usual appetite. The injections of hot and cold water were repeated, as was also the placebo.

8 *o'Clock* P.M.—Continues well, no appreciable change is discoverable either in the condition or position of the os and cervix uteri. *Continue the treatment as above.*

5th April, 11 *o'Clock* A.M.—Patient was rather restless during the night, in consequence of occasional fleeting pains in her loins and the lower part of her belly. No change discoverable on making a vaginal examination. *Continue the treatment.*

8 *o'Clock* P.M.—Has been free from any recurrence of the lumbar pain. Says that she knows no difference in herself since we began. *Continue the treatment.*

6th April, 9 *o'Clock* A.M.—Rested very well during the night, has nothing to complain of: condition of the uterus unchanged. After having injected a current of hot, and then of cold water as formerly, hot water was again injected for about seven minutes. At intervals during the whole period of this operation, a stream of cold water was dashed upon the abdomen, over the fundus uteri.

3 *o'Clock* P.M.—Continues as before. Repeat the treatment as described above.

8 *o'Clock* P.M.—No change since last report. Repeat the treatment as above.

When seen next, on the morning of the 7th, there was not the least evidence of any change in the condition of the uterus; patient was free from pain, and had passed a tolerably good night. There being, therefore, no inducement to persist in the mode of treatment described above, it was accordingly abandoned. On the same day about 3 o'clock P.M. Dr. Pagan punctured the membranes with a catheter.* When seen in the evening she said she felt quite well, and was free from pain. Early in the morning of the 8th she began to have occasional grinding pains, and these became more frequent and severe as the morning advanced. About 8 o'clock A.M. the os uteri was dilated to somewhat more than the size of a shilling; the child presented by the breech. Shortly after 11 o'clock A.M. the breech was expelled, and the next two or three pains being inefficient in effecting delivery, Mr. Pearson brought down the hands and extracted the shoulders and head; the placenta came away almost immediately after. The child gasped once or twice after delivery, but could not be resuscitated. It had a healthy appearance, and was well formed; its development was that of a child about the beginning of the eighth month of utero-gestation. Patient made a good recovery; on the fourth or fifth day after delivery she was up and walking about as usual.

---

* This mode of inducing premature labour, though not the one recommended by Dr. Pagan, was had recourse to in this instance for reasons which have no bearing upon the case, and which it is unnecessary to mention.

A portion of the liquor amnii drawn off through the catheter, when the membranes were punctured, was collected for examination. While warm it was of a pale-yellow colour, clear and transparent; but on cooling it became opalescent, and yielded a white flocculent deposit. It had a faint, peculiar odour, and its taste was slightly saline. It was neutral to litmus and turmeric papers; had a Specific Gravity equal to 1007·8. It gave no indication of the presence of ammonia when boiled with caustic potash; it yielded no indications of the presence of sugar when examined by Trömmer's and other tests. A portion was evaporated to a thick syrupy consistence and ether added; but without obtaining any traces of fat or oil. It was coagulated by heat, by nitric acid, and by alcohol; one thousand grains when dried yielded about 12 grs. of residue or solid matter; this after being burned afforded indications of the presence of chlorine, &c.

IX.—*Observations on the Construction and Ventilation of Hospitals for the Sick, with reference to the proposed Addition to the Glasgow Royal Infirmary.* By JOHN CHARLES STEELE, M.D., Superintendent, &c.

It will be in the recollection of those of our readers who are interested in the progress of the Royal Infirmary, that at the Annual Meeting held on 3d January 1853, the Court of Contributors then present, granted authority to enable the Management to proceed with the erection of a supplementary Hospital on the vacant ground possessed by the Institution. The necessity of this measure had become obvious, in consequence of the annually increasing demands for admission, and its expediency had been repeatedly urged on the public in the Annual Reports for several years preceding. Whether such an extension of the permanent accommodation should be carried out within the Infirmary grounds, or in some other populous locality of the city, involves a question of very material importance, the merits of which it is not necessary here to discuss. It is, however, consistent with our present purpose to state, that the various bearings of the subject have been fully entertained by those gentlemen to whom the interests of the charity are intrusted; and that it was not before anxious and mature deliberation, that they decided in favour of the former alternative. In order to appreciate aright the motives which have induced the Management to have recourse to the above step, the following epitome of the historical progress of the Infirmary, though not, strictly speaking, within the pale of our text, borders sufficiently near its confines to warrant recital.

When the Royal Infirmary was first opened, towards the end of 1794, its accommodation consisted of 8 wards, containing each 20 patients, and making a total of 160 beds. At this period, the population of Glasgow was estimated at 66,500. In 1815, the Managers first announced the insufficiency of the accommodation, and in 1816, four new wards, forming the back wing of the front House, were opened, increasing thereby the number of beds to 240. Soon after this, epidemic fever made its appearance in the city; and although at occasional intervals it may have remained dormant, it cannot be said from the period in question ever to have become extinct. In 1817, the year immediately following the addition, the accommodation was repeatedly found inadequate; and in order to meet the exigencies of the time, a Fever Hospital of a temporary character was established by an association of gentlemen styling themselves the Fever Committee. Next came the repeated outbreaks of epidemic disease; and it is instructive to observe the periodic regularity the attacks assume. In 1824, and again in 1827, temporary Fever Hospitals were erected in the most populous parts of the city; and in 1828, in consequence of the continuance of the epidemic, a wooden shed, containing 68 beds, was erected within the precincts of the Infirmary. Under these pressing circumstances, the public at length authorized the erection of a permanent and distinct Fever Hospital; and in 1829, the centre and south wing of that establishment were opened with accommodation for 100 patients, making a permanent total of 340 beds. This also was soon found to be insufficient; and the extensive prevalence of fever in 1831, necessitated the opening of a supplementary Hospital at Mile-end, fitted to receive 135 patients at a time, and which was occupied during seven months of that year. In 1833, the north wing of the Fever Hospital was completed, furnishing 80 beds more, and making the permanent total accommodation available for 420 patients. From that date till the present, an interval of twenty years has elapsed, and no other permanent extension of the building has been carried out, although the population of the city has been increased during the period by an addition of not less than 170,000.

Continuing the summary of epidemic visitations, we next reach the year 1837, a period remarkably fruitful in the production of zymotic disease. Both houses were crowded with patients; and a temporary Hospital in Albion Street was kept open for thirteen months. About the same period, the Managers appear from the records to have been seriously considering the propriety of extending the Infirmary in another part of the city; and with this object, they had acquired by purchase a piece of ground to the east of St. Andrew's Square, facing the green, with the view of erecting permanent accommodation for the contagiously affected in this densely populated locality; but for various reasons, their intention was never carried out. For an interval of nine years subsequent to 1837, the two Hospitals were found adequate to the demands for admission, notwithstanding the recurrence of an epidemic in

1843, which furnished 3,467 patients to the fever wards. The type of this fever, however, was mild, and its course remarkably short, accounting for the large number who participated in the benefits of the charity, without recourse being had to extra accommodation.

It was very different with the epidemic which succeeded it, three years afterwards. Towards the end of 1846, typhus appeared in an unusually virulent and contagious form, and the wards soon became overcrowded with victims. Other accommodation was found absolutely necessary, and the temporary use of the Lock Hospital in Rottenrow was eagerly accepted; and in a short time, the hundred beds it was fitted to contain were fully occupied. Notwithstanding all this, the number of applicants for relief, with whose cases it had become impossible to comply, ranged from 100 to 120; and as a last resource, it was resolved to erect the wooden sheds, which still remain on the Hospital green, a memento of the period, with further accommodation for 120 patients. The Managers at length found they could no longer grapple with the epidemic, and the Parochial Authorities, for the first time since the new Poor Law Act had come into operation, were reluctantly compelled to find a refuge for the diseased poor in Hospitals under their own immediate jurisdiction.

Fortunately for the city, no similar outbreak of fever has occurred during the interval that has elapsed since 1847; and when the disease has exhibited a more than usual amount of prevalence, the union of the temporary with the permanent building, has sufficed to meet the wants of the public. In other respects also, the shed accommodation has been found extremely useful. In seasons of Hospital disease, in the periodic cleaning of the wards, and as an asylum for severe surgical cases, it has been found invaluable, and is annually employed for one or other of these purposes. In fact, it would have been impossible at occasional intervals, to have treated the patients satisfactorily without this addition, and numbers would consequently have been refused admission. Considering, therefore, the very temporary nature of the building, and the probability of its decay, premonitory symptoms of which having already made their appearance, it was highly desirable that a permanent building should be substituted in its stead.

Partly with this object, but mainly for the purpose of preventing, at any future period, the erection of buildings that might interfere with the amenities of the Infirmary, the Managers, in the course of last year, acquired, from the Magistrates and Council, a piece of ground of 530 square yards, lying to the north-west boundary of the building. After an extension of the present accommodation had been finally resolved on, the expediency of obtaining additional airing ground for the patients became so evident, that negotiations were immediately entered into with the same proprietors, and with every reasonable hope of success, for the purchase of that portion of St. Mungo's burying-ground lying adjacent to the Infirmary. Unfortunately, however, it appeared that from some clause in the deed of transference of the property, the desirable object could not be entertained, and the Managers were forced to restrict themselves to the old boundaries, with the comforting assurance, that the same restriction which forbids an extension of the Infirmary in the direction proposed, applies with equal power to all other erections; so that an area of about two acres in extent, will be henceforth preserved, which must tend greatly to promote and facilitate ventilation.

While these matters were under discussion, a very valuable document was transmitted us, embodying the opinions of a deputation of the Directors of the Newcastle-upon-Tyne Infirmary, who had been instructed to visit and report on the construction and domestic arrangements of a variety of separate Hospitals, with the view of introducing the most recent improvements into the new wing, which it had been previously resolved should be added to the hospital in that city. The state of matters at Newcastle, was in so many respects similar to our own, with reference both to the amount of spare ground at the disposal of the Governors, and the manner in which that ground might be made permanently most useful, that it was thought desirable to obtain more ample information on many collateral points, than that furnished by the Committee's Report. The writer was in consequence commissioned to proceed to Newcastle, and likewise to visit the new hospital in course of erection at Dundee, and to obtain such knowledge as might prove useful in aiding the exertions of the Managers, with respect to the proposed extension of the Glasgow Infirmary.

Through the kindness of Mr. Gibb, the intelligent Secretary and House Surgeon to the Newcastle Infirmary, who attended the deputation, ready access was obtained to the plans of the various hospitals visited, and the fullest information given on other subjects, some of which were only casually alluded to by the Committee in their Report. I found the number of hospitals visited to be ten, and with one exception, namely, that of St. Jean at Brussels, they were exclusively English. One and all had undergone more or less remodelling and enlargement during the last few years; and I could not help thinking, that had the Committee extended their journey north of the Tweed, they might have served their purpose better, at least they would have been fully rewarded for their trouble. The reported investigations of this body extended to many details of domestic economy, as well as the various methods of construction, ventilation, heating and cleansing of the interior of hospitals. Of the last of these, as comprising the more important topics, I intend at present to treat; and as the majority of my readers cannot have an opportunity of perusing the Report alluded to, I will not scruple to make free use of its contents in the course of my remarks.

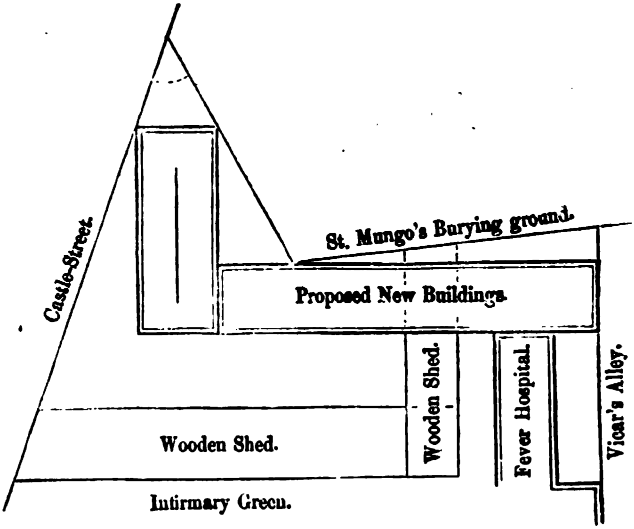
General Form of Hospitals.—The main object to be attained in the external construction of all habitable buildings, applies with great force to hospitals for the sick; it is simply this: allow free access to the external atmosphere, at as many points as possible, without impeding the natural current, or allowing it to stagnate by means of wings and enclosures. The rectilinear form would obviate the latter objection; and as a general rule, it is the most suitable design, its frequent adoption in small provincial hospitals affording proof of the fact. But in large cities, where difficulty is often experienced in obtaining a sufficient stretch of ground for building purposes, and the accommodation required is necessarily and correspondingly great, it is usual to have recourse to additions in the shape of projecting wings. This may be accomplished in various ways. The common form, and perhaps the least objectionable, is the quadrangular, with one side wanting, thus ⊔, the projecting wings being of much less extent than the stretch of front. Such an arrangement has been recently introduced into the new Infirmary at Dundee, the front of which extends across an area of not less than 350 feet; the length of the wings being limited to about 120 feet, and enclosing a large space of ground which it is intended to lay out as a garden. Other forms are met with bearing a resemblance to the letter **T**, as in the case of the Glasgow Infirmary, and which by the addition of another wing, might be converted into a very commodious building, covering a very small area, and presenting the appearance of the letter **H**. This latter form has been carried out in St. George's Hospital, London, Jenny Lind Hospital, Liverpool, and numerous other hospitals and workhouses throughout the country; but it is clear that so many angular projections must impede materially the free circulation of air.

The majority of hospitals, both in England and Scotland, have been subjected to much mutilation and extension, in consequence of the increase of population in the towns in which they were severally built, resulting in their liability to a similar objection. Even in some of the most recently constructed buildings, the same obstacle to ventilation might be urged; and there are not wanting instances where the quadrangular form has been retained, shutting in a square area with no opening except from above. The hospital at Brussels, so much vaunted as a pattern of hospital architecture, contains no fewer than seven courts of this description, which in certain seasons form so many reservoirs for the stagnant air. The same may be said of the "Hôpital de Nord" in Paris, the new Hospital that four successive governments have been employed in substituting for the Hotel Dieu, and in fact of all buildings that are intended to accommodate upwards of a thousand patients.

To obviate many objections on the score of deficient ventilation, it appears to me that a building contrived somewhat after the fashion of the letter **V**, with the angle squared and widened thus _/, though atrociously inconsistent with the æsthetics of architecture, might answer the desired end better than the multifarious forms we are in the habit of witnessing. In the centre or communicating part, ample accommodation could be furnished for the officials, who would have near and ready access to the wards; and the wings being entirely reserved for patients, it follows that in the event of any extension of such a building being resolved on, it could only be carried into effect by adding to the wings in a longitudinal direction, and thus increasing and facilitating the atmospheric current.

Independent of these speculations, the extent of space on which an hospital should be constructed must depend entirely on the amount and position of ground at disposal, and its external form arranged accordingly. Such is at present the case with regard to the proposed addition to the Glasgow Infirmary, to which I again refer. The most eligible site, and indeed the only site within the property line, on which such a building can be raised, is to the north and north-west boundary of the grounds, the back aspect bordering closely on St. Mungo's burying-ground, and the front facing the Infirmary green. A straight line drawn from the Vicar's Alley on the east, and at a right angle with the northern extremity of the present Fever Hospital to Castle Street on the west, will enclose an area of ground belonging to the Infirmary, amounting to 1270 square yards, open on all sides to the external atmosphere, excepting a space of thirty feet in length, where it is encroached upon by the Fever Hospital. On this spot it is proposed to erect a building suitable for the accommodation of about 200 patients, allowing for each a larger amount of cubic space than hitherto it has been possible to furnish, and containing such improvements in the interior as have been found practically useful and beneficial in other and similar institutions. The following lines will illustrate our meaning, and the intentions of the Managers better than any written description.

The angular projections formed by an erection of this sort, though not perhaps so seemly in appearance, nevertheless present fewer faults, with reference to salubrity, than the ordinary three-sided form of building. There is no court or enclosure that can possibly become a receptacle for stagnant air, the simple rectangular shape completely obviating the objection; and when the wooden sheds which at present disfigure the Hospital Green are removed, an area of about two acres in extent, situated between the old and new buildings, will be thrown open, affording airing ground for convalescent patients, as well as facilitating atmospheric access to the lower wards of both houses. It is satisfactory to know, that after the contemplated addition has been completed, there will still remain within and without the limits of the Infirmary, a larger amount of space than usually falls to the lot of hospitals situated in large cities; and, indeed, with the single exception of Dundee, I know of no city that is so well off in this respect as Glasgow.



Form and Dimensions of Wards.—There is great variety in the general arrangements of the wards of most hospitals. As a general rule, those built prior to the present century are small and confined, and are entered from a corridor leading along the whole wings of the building by numerous doors. Such an arrangement answers conveniently the purposes of classification, but it is ill adapted for aiding ventilation, one side of the apartment being necessarily shut out from the external atmosphere. It is objectionable also on the point of economy, separate officials, apparatus, and other conveniences, being as indispensable in a small ward as in one twice or three times the size. I was somewhat surprised to find the system alluded to carried out to its full extent in the new Surgical Hospital at Edinburgh, although it is but fair to state, that the medical officers and others with whom I consulted, appeared to deprecate the arrangement. In the construction of the wards in the new Infirmary at Dundee, the Managers have scrupulously adhered to the recommendation of Professors Christison and Syme, in favour of corridors leading throughout each flat and wing of the building; but the wards themselves are large and airy, and are not open to the same objections as those in Edinburgh. The extensive passages, however, must strike most people as so much space lost, and the partition walls as an impediment to the free circulation of air, although much has been done to obviate the latter by the introduction of windows, moving freely by means of a central pivot, at separate distances in the wall; and it is also proposed to make the former available in epidemic outbreaks, by appropriating them for the reception of surplus cases of fever. It is a curious fact, that while in the two most recently constructed hospitals in Scotland, an arrangement should be adopted so much at variance with the primary construction of the Edinburgh and Glasgow Infirmaries, two of the oldest institutions in the country, the English Hospitals have of late been undergoing a transformation and assimilation to the latter. To illustrate this, I quote from the Report of the Newcastle deputation, after a careful inspection of the principal English Hospitals:—"Of late, a much more healthy, compact, and convenient arrangement has been introduced into hospitals. The wards are large, and are entered by a door close to the stairs, there being no great length of corridor;" and on instituting a comparison between their own hospital and the new wing of St. Thomas's, London, given as a type of the modern arrangement, the Committee remark:—"It will be observed that the wing of our Infirmary is cut up into many small and confined rooms, whilst the modern hospital is constructed on a totally different principle. In the latter, the nurses', and other rooms, are seen to be appendages to the large ward, which extends from end to end of the wing, and is capable of being ventilated by currents of fresh air from all parts."

As it is of the utmost importance in an hospital to have an abundance of light, it is advantageous, on this account also, that each flat of each wing should be constituted into a distinct ward, including nurses'-room, bath-room, scullery, and other conveniences. In the proposed new addition to the Glasgow Infirmary, the architect, Mr. Brown, by a judicious arrangement of the interior accommodation, has contrived to accomplish this desirable object in a very satisfactory manner. The staircase, instead of being made to enter from the centre of a wing, as is the case in our older buildings, will be placed near to the angle of union between the two series of wards, and ready access will be obtained in this way to the separate floors. It is also intended that it should be situated outside, projecting considerably, or about twenty feet into the green, so as not to interfere in any way with the dimensions of the wards. This arrangement will enable the staircase to be well lighted by large windows externally, instead of the more objectionable plan by skylights. The importance of having a large and open staircase in an hospital, cannot well be over-estimated; it forms the best and simplest shaft for the admission of air to the interior; and as accident and other severe and helpless cases are being occasionally carried to and from the wards, it is advantageous to have it as wide as possible. The steps should be at least five feet broad, and the landing-places and corridors of corresponding dimensions; angles in the passages and doorways should by all means be avoided, while the doors ought to be made to open from the centre in two halves, one being retained for ordinary use, and the other for extraordinary.

With reference to the length of the wards, it is scarcely possible to state by what rule we should be guided; but as a matter of economy, if not of salubrity, the long ward is decidedly the most preferable. Cross partitions diminish the internal space, and multiply corners requiring to be looked after, and to be kept clean; and it ought to follow, that the less labour imposed upon nurses, the more time have they to attend to the patients. In large wards, it is of course necessary to increase occasionally the number of officials, but the number can be regulated with more facility in a large than in a small ward, the latter constantly requiring a night and a day servant to attend to the inmates. On an examination of the wards in forty of the principal hospitals in this country, Sir George Ballingall gives the average length of each as 47 feet, the largest being 136, and the shortest 14 feet. It will be found, however, that in hospitals recently constructed, the average is considerably higher. In the spacious addition to Guy's Hospital, the wards are 70 feet in length; and the pavilions at Brussels, and new wards of St. Thomas's, cannot be less than 100 feet. In Dundee, the new wards are 103 feet long, by 22 wide; in Newcastle, they are 111 by 50 feet wide, the additional breadth in this Hospital furnishing space for four rows of beds. The average size of the occupied wards in the Glasgow Infirmary is 50 × 24, a central partition dividing each of the wards in the Fever Hospital reduces the dimensions of the latter to 24 × 24. In the new erection it is proposed to have the front set of wards 90 feet long, and the back set 75.

If any difference of opinion should exist with reference to the length and breadth of wards, all authorities are unanimous with respect to the propriety of having a high elevation to the ceiling, the gain of space in a perpendicular direction being more than equivalent to a similar amount allowed in the horizontal, foul air being supposed to rise upwards, and not to radiate horizontally. The disadvantages of low ceilings in apartments for the sick are so obvious, and their existence so much opposed to success in treatment, that it is difficult to discover even in our oldest hospitals, an elevation of less than 10 or 12 feet. A height of ceiling, varying from 14 to 16 feet, is now-a-days generally adopted as a medium pitch; the highest I have seen is in the new Hospital at Edinburgh, which rises as high as 19 feet. The amount proposed for the Glasgow Hospital is 15, being 3 feet more than has been allowed to the wards presently occupied. The height obtainable for the ceiling, however, chiefly depends on the number of floors on the building, and will in most cases be regulated accordingly. In almost every hospital — I know of few exceptions to the rule—the basement floor is set aside for domestic and other purposes, so as to ensure healthy and airy accommodation for the patients above. We are assured also by the highest statistical authority, that the inhabitants of the upper floors of houses enjoy better health than those residing in the lower; and if such be the case with respect to individuals in average health, it will obtain with greater force among those suffering from disease. On this account it has been customary of late years to limit the number of flats in an hospital to two, or at the most three, according to the area at disposal, and the accommodation required; and the opinion is even pretty generally entertained that no method would be so conducive to the recovery of patients, as that whereby the whole inmates might be accommodated and treated in one flat, of extensive height, with a basement storey beneath to preserve ventilation, and aid in effecting a thorough drainage. The most suitable plan that can be adopted, with reference to our supplementary addition, will be to allow three floors for patients, the increased amount of elevation in each floor coinciding with, and allowing the new building to adapt itself to the extreme elevation of the Fever Hospital. A connexion between the two buildings can be sustained by means of the basement storey, into which it is proposed to introduce a corridor, communicating with the staircase, and which, if necessary, may be made to lead round the whole erection. The rest of the space in the ground floor may be made available for many useful purposes, such as dormitories for night nurses and servants —the want of proper accommodation for this purpose having been long felt in the house. It would also be desirable to devote a portion of it for waiting-rooms, and to obtain as much space as will be required for the Museum of Pathology, the nucleus of which has already grown into a promising bantling, under the care of my friend Dr. Aitken. The wards above, extending—as it is proposed they should—through the whole length of the wings, will individually accommodate nearly double the number of patients at present allotted to the wards of the old building. Those fronting the green will contain at least 30 beds; and each of the double wards of the back wing will allow 40 beds to be placed conveniently. The dimensions of the former will amount to 90 × 36, and the double ward to 75 × 40.

The arrangement whereby four rows of patients are accommodated under one roof, may appear at variance with the principles I formerly referred to, in connexion with free ventilation; but it is possible to obviate the objections in various ways. A partition from 4 to 6 feet high, running along the central length of the ward, or an ordinary wall with large open spaces may be introduced, each method allowing a free transit to the atmosphere. After much deliberation, the Managers of the Newcastle Infirmary have decided to adopt the latter plan, in the addition in course of erection in that city. In a portion of the Glasgow building, it is contemplated to adopt the former method, as a freer current of air will be obtained by that means, the smaller size of the wards rendering this disposition more healthy and convenient. It is satisfactory to know that a similar arrangement is carried out with great efficiency in the Fever Hospital, London, and in the beautiful new addition to Guy's: examples of the same may also be seen in the new building recently added to the Town's Hospital, Glasgow, and in the large wooden shed attached to the Royal Infirmary. It will of course be necessary, when the breadth of wards exceed a space of thirty feet, to have cross-beams and pillars placed along the centre for support; and besides ensuring this end, these may be so constructed as to give an airy, if not an elegant appearance to the interior.

Among other novelties and improvements introduced of late years in the internal construction of hospitals, we must specify particularly the employment of Parian cement, instead of lath and plaster. It ought to be a universal law that everything which has a tendency to absorb moisture in an hospital, should by all means be avoided. The new composition effectually enforces this; it is hard and dry, may be made of any colour, is as smooth as polished marble, and can be washed down periodically with soap and water. Walls composed of this material are preferable to the high skirting boards, or to oil-painted wards, and possess an infinite advantage over the old process, whereby white dirt is abundantly heaped over black in the system of whitewashing, a process we were glad to observe was being abandoned in every quarter. The only objection to the use of Parian is its very high price when compared with ordinary plaster; but it is highly probable that the more permanent nature of the former may outweigh the primary economical advantages of the latter.

Connected with the internal arrangements of the wards, the flooring, and the mode of cleaning, are subjects that have excited considerable attention of late. Scouring the boards with soap and water, a practice so much in vogue in Scotland, has long since been abandoned in the continental hospitals; and as appears from the remarks of the Newcastle deputation, it has also got into disuse in many English institutions. Whether the absorption of moisture by the wood has actually the effect of originating such diseases as gangrene or erysipelas, or of facilitating their spread in the wards of an hospital, is exceedingly questionable, but the weight of medical opinion is certainly in favour of the supposition. The substitution of the dry for the wet system of scrubbing, is the remedy recommended. In old floors that have been constantly subjected to the last method of cleaning, it is almost impossible to adopt the former advantageously, as the moisture will have had the effect of swelling the boards, enlarging the interstices, and producing an unequal and uneven surface, which it would be difficult to clean by other means. In new flooring, the case is different, and the harder the material employed, the better adapted is it for dry cleaning. On this account, no kind of flooring is equal to oak, next pitch pine, and last of all, well-seasoned red fir—the ordinary white fir not being at all adapted for public buildings. "In St. Thomas's, and in the General Hospital at Birmingham, the floors are made of oak; and once in every three mouths, after being well washed with soda, soap, and water, are rubbed bright with wax. Dirt is removed in the interval by means of a hard brush; and the use of water for this purpose is absolutely forbidden in the interior of the wards, as erysipelas and other diseases are considered by the medical officers, to arise in part from the too lavish employment of water in washing the floors." I have seen the same plan in operation in the Parisian Hospitals, and like others at first, experienced no little difficulty in retaining the erect posture when walking on such a surface; and in this respect only is it at all objectionable. If dry scrubbing is to be employed in an Hospital, it must be carefully and efficiently carried out, otherwise the object will be thwarted. I have no doubt that in nearly every hospital in this country where an attempt has been made to introduce it, failure has arisen from its careless performance. Excepting places of business, there are few apartments in which a greater amount of traffic, in a certain sense, daily occurs, than in the wards of an hospital for the sick in a large city. The influx of friends and relatives at one hour, and the visit of the medical officer with his staff of students at another, tend greatly to increase the labour of the officials by the amount of dirt unconsciously carried into the interior. In our Fever Hospital, where visitors are prohibited, and students exhibit but little enthusiasm in acquiring an intimate knowledge of the malady, the labour of cleaning is comparatively trivial, and the floors have unquestionably a cleaner and healthier appearance than in any other part of the Institution.

As a remedy for the disadvantages of wooden flooring, it has been proposed to substitute other materials, such as asphalte, stone, brick, tile, &c. but these again are objectionable on the ground of rendering a dormitory less warm and comfortable. In some of the large wards of the old Infirmary at Edinburgh, the passage between the rows of beds is laid with star-shaped slabs of Arbroath pavement, made to imitate coarse mosaic. This arrangement gives a clean and somewhat even of an elegant appearance to the interior; and so convinced have the committee been of its usefulness, that a modification of the same system has been introduced into the new Surgical Hospital which was recently opened in that city. I believe the same principles might be adopted with considerable advantage in the proposed supplementary addition. It is not of course intended that this remark should apply to the entire flooring of a ward, but simply to that portion of it that will be most trodden upon by visitors and strangers. If fir is to be used, care should be taken that it be well seasoned, and the walls of the building thoroughly dry, before a plank is laid down. Inattention to this point has to my own knowledge been attended with most disastrous results in several institutions, and it is well that the builder's operations should be watched and checked if necessary by an experienced committee.

Amount of Space for each Patient.—Of late years, an unusual amount of attention has very justly been bestowed on the average amount of cubic space furnished to each patient in the construction of our hospitals. This method of calculation, which appears to have been first suggested by Tenon, in his book on the Parisian Hospitals, is intended to exhibit the comparative merits and defects of different institutions, but it is by no means an infallible criterion. Many other influences, such as the method of heating and ventilation, the character of the cases admitted, and the age of the building, have a more direct bearing on the results of treatment, than the estimated capacity of space individually allowed. As a general rule, surgical cases require more room than medical, and medical more than fever cases; but at the same time it must be kept in view, that on account of the mixed character of surgical cases, one class will require the maximum amount, while the other will in all probability do well under the most unfavourable circumstances. A single case of extensive burn from fire-damp, such as we frequently receive into the Glasgow Hospital, will of itself pollute the whole atmosphere of a surgical ward, while the patients suffering from simple fracture and dislocations appear to convalesce rapidly enough, notwithstanding the disadvantage of respiring the same air. The following calculation, partly taken from a Report of the medical officers of the Royal Infirmary at Dundee, gives the estimated amount of space allotted to each patient in the various institutions mentioned. It will hardly be credited that so much deviation from an average standard should exist:—In the London Hospital, 1,700 cubic feet; Newcastle-upon-Tyne New Hospital, 1,500; St. Bartholomew's, 1,650; Guy's, 1,200; Westminster, 1,200; Edinburgh, 1,090; Perth, 1,000; Glasgow, 750; Liverpool, 561; Dundee Old Hospital, 398; New Hospital, 1,545. The estimate for Glasgow indicates the amount of space allowed to each patient, supposing the wards were fully occupied; but according to the system of receiving patients, the wards seldom contain their allotted number, and during the summer months they are usually not more than one-half occupied. The average amount of individual accommodation is in consequence vastly increased, and it would be nearer the mark were we to fix it from 1,000 to 1,200 cubic feet. Taking everything into consideration, we would be disposed to recommend 1,000 cubic feet as the minimum allowance of space for each patient, varying the allowance of head-room according to the character of the case and the other dimensions of the ward. I observe that Dr. Christison recommends 9 feet of head-room for ordinary, and 12 for fever cases; but if these estimates were carried into practical operation in our proposed Hospital, the amount of space absorbed by each patient would be unnecessarily great, and the anticipitated total accommodation lessened about one-third.

Ventilation and Heating.—The important subject of ventilation may with great propriety be subdivided into two branches, the theoretical and the practical. The apparent success of the former is illustrated by many a well-arranged model, and the plausibility of the arguments used to enforce its claims upon public notice have obtained for it a trial in nearly every public institution. It is useless to deny that the majority of these attempts have signally failed, and that there is now a tendency to adopt a simple and natural, and consequently a more practicable plan of heating and ventilating. As illustrative of the vast amount of labour and ingenuity that has been expended on this chimera, we quote the remarks of the committee formerly alluded to:—"With regard to ventilation, we have seen a great diversity of systems, and observed that the most complicated and expensive is that which has been generally found to be the least effective. In some we found furnaces and towers specially built for this purpose, but now entirely cast aside. In those whose ventilation was most perfect, we found the system simple and natural." In other words, there were no mechanical contrivances employed to control the ordinary current of the atmosphere, fresh air being admitted—as it is in all well-constructed buildings—by doors and windows, and allowed to escape by the chimney, with occasionally the assistance of ascending flues communicating with the roof. If it were possible to regulate the access and egress of the atmosphere by certain fixed laws, such as theorists are in the habit of propounding, little difficulty would be experienced in obtaining that most desirable of all objects in an hospital, an efficient and healthy system of ventilation. Unfortunately for this purpose the atmosphere is in a great measure beyond our control, and we not unfrequently witness the flues and open spaces introduced into buildings as a means of facilitating the exit of contaminated air, having a directly opposite effect. As a rule, the access of fresh air ought to be maintained chiefly by the windows and doors, and the egress of foul air by the same passages, with the assistance of open fire places. In large wards, and in this comparatively cold climate, little else will be found necessary; but in hot seasons, and when the building is unusually crowded, it would be advantageous to possess some means of supplying a current of fresh air from below. The simplest manner in which this could be accomplished, without subjecting the inmates to irregular exposure, is by means of channels between the joists, communicating externally by means of a grated aperture with the air, and opening internally in the centre of the floor by a perforated plate or damper, which could be regulated at will. Instead of opening into the centre of the floor, it has been proposed to have a perforated wooden channel communicating externally in the same way, passing round the whole wards at the head of the bedsteads. This contrivance appears from its mutilated remains, to have been at one time in operation in the Fever Hospital, and we observed its adoption in the new Surgical Hospital at Edinburgh. Whether or not its employment will be found objectionable, it is premature to state; but a current of cold air admitted from beneath the bedstead of a patient, cannot well be considered in any other light. Among many methods proposed to accelerate the escape of vitiated air, the simplest and most effectual consists of openings in the roof, communicating with an ascending flue placed as near as possible to and alongside of the chimney. If a ventilating flue can be dispensed with, it will be found advantageous to furnish the chimney of each ward with the apparatus known under the name of Dr. Arnott's ventilator, which I have seen working admirably in different hospitals.

With reference to the manner in which the windows of the wards should be constructed, with the double object of securing light and promoting ventilation, great improvements have been effected of late. I have found the introduction of perforated glass panes useful in establishing a constant and almost imperceptible current of fresh air night and day, and their utility is greatly enhanced by being beyond the interference and caprice of nurses and patients. It is usual to have the windows made large, and to extend them from the ceiling to within a few feet of the floor. When such is the case, it is almost necessary to have each window separated into three divisions, the lower of which is kept fixed, while the two upper are made to turn downwards and inwards by means of a horizontal rod or pivot placed across the centre of each division. By this method, an access for the air, varying from one to six inches, may be obtained at will; and while the ward occupants are freed from any direct exposure to the current, rain is effectually prevented from entering. This arrangement is greatly superior to the system of hopper-mouthed ventilators at present in use in the Glasgow Infirmary, and might be introduced with advantage into many of the wards in the old building.

There are other very important subjects connected with the improvements in the construction of hospitals, such as the various methods of heating, supply of hot water to the wards, hoists, mortuaries, and other conveniences, to which I would willingly have alluded, had I not already greatly exceeded my original intentions. In the hope that every new experience of the working of the details of hospital management may not altogether prove valueless, these remarks are respectfully submitted, rather with the view of *directing consideration and discussion to the* subjects treated of, than from any desire to propound dogmas that might turn out at some future period to be wholly inapplicable.

X. *On the Method of Preserving Vaccine Lymph in Capillary Tubes, and of rendering Vaccination more General.* By ROBERT T. CORBETT, M.D., Fellow of, and Vaccinator for, the Faculty of Physicians and Surgeons of Glasgow.

THE following remarks were written in the month of May last, but were not inserted in the July number of the *Glasgow Medical Journal* from want of space. Since then I observe from the report of the meeting of the Edinburgh Medico-Chirurgical Society, in the *Monthly Journal of Medical Science,* for June 1853, that Dr. Husband of Edinburgh read a paper "On the Method of Preserving Vaccine Lymph in Capillary Tubes," to that Society, and reference is made in the report to his former observations on the same topic. These observations I have read in the same journal (vol. xiii. for 1851); but previous to the last few weeks, I was not aware of anything having been written on the subject, or of the method being practised in Edinburgh. This I am correct in saying, that the plan of vaccinating from capillary tubes was not practised in Glasgow, and I have reason to believe, in all the west of Scotland, notwithstanding the publication of Dr. Husband's interesting paper. Dr. Husband says, "The employment of capillary tubes in vaccination, was first suggested as far back as the beginning of the present century." It would appear, then, that there is nothing new in the method, although a highly useful and most convenient one; but, as it is practically a dead letter to the bulk of the profession, I have thought it proper still to publish the following remarks, in order that the plan might become as general as possible, being satisfied that it is the most effectual for preserving the lymph in a pure state for an indefinite length of time, and of course for rendering the operation of vaccination successful.

In the first number of the *Glasgow Medical Journal,* I have read with great interest Dr. Steele's remarks on the increase of small-pox in Glasgow. He proves, from the returns of mortality for the city and suburbs, that this increase is owing to inattention on the part of the community to vaccination; and that the number of deaths resulting therefrom is immeasurably large, when compared with that in localities where vaccination is sedulously attended to. As a consequence of this defective state of things, we are prepared to find, that this increase of mortality is principally amongst infants; and Dr. Steele's paper informs us, that out of a mortality of 584 from small-pox last year, 527 were under five years of age. This increase of small-pox from such a cause is much to be lamented, and calls upon every one to do all he can to remedy the evil.

The method of preserving vaccine lymph to which I allude, will prove useful in other localities than those remote. It will prove a great convenience to the practitioner who is not methodical in vaccination, and to those whose practice does not enable them to keep up a supply in the old way. Besides, by it, no one applying for vaccination need be sent away from want of lymph, possibly if so, to be infected with small-pox before it can be applied. In truth, this plan must be advantageous to all practitioners, however extensive their practice, who will take the least trouble to render themselves independent of others for a supply.

The tubules employed should be made nearly as small as possible in the caliber, and may be broken into lengths of three inches. These are easily filled by dipping one end into the fluid which exudes from a punctured vaccine vesicle, occasionally holding the tube in a horizontal position to assist the flow. When filled half an inch or inch, the fluid is made to reach the centre by inverting the tubule, and whilst it is held between the forefinger and thumb, by tapping gently over these. They are then to be hermetically sealed by inserting each end into the flame of gas or candle, and may then be put into a test tube, phial, or other convenient receptacle.

By the means mentioned, we have always at the Faculty Hall, a supply of fresh lymph; and so uniform has the success been, since my appointment as vaccinator in October last, that we have only had one case, in which the lymph failed to produce the desired effect in a first application.

I have now been vaccinating from the tubules for upwards of two years; and although I have used them often, after having been kept for fourteen months, and for all intermediate periods of time, the result has always been equally successful. If, then, the experience of others in their use should prove as satisfactory, this method must greatly assist in rendering vaccination more general and more efficient, never in my experience having been followed by spurious pustules, so often to be met with as the result of vaccination from charged glasses, which have been kept even for a short time. But I may remark, that I have been most particular in selecting the best vesicles from which to fill the tubules and most careful in hermetically sealing them. These conditions must be observed to attain similar success.*

---

* A neat and useful case for vaccination, made according to my directions, may now be purchased at Mr. W. B. Hilliard's, Buchanan-Street, Glasgow.

XI. *Clinical Notes.* By JAMES A. LAURIE, M.D., Professor of Surgery in the University of Glasgow.

STATISTICS OF TETANUS.

WHEN lecturing on tetanus, I have found it necessary to say that while we knew it to be one of the most fatal of secondary surgical diseases, we were not in possession of data by which the ratio of its mortality could be ascertained. On this point the inferences drawn from any tables which I have seen, especially that of Mr. Curling, are most fallacious, for the obvious reason that the tables being made up of published cases, a large proportion of which are recorded because they are recoveries, give results which fall far short of the actual mortality. In the hope of supplying this desideratum, I turned, as I have already on former occasions done, to the records of the Glasgow Infirmary. The results of that investigation form the groundwork of this communication, and if they should not be in every respect satisfactory to those who take an interest in surgical statistics, I hope they may at least induce them to follow up the inquiry in a manner somewhat similar. It is only by a careful and truthful record of all the cases which occur in large hospitals, that accuracy on this and many allied subjects can be arrived at. After a very careful search through all the records of our Infirmary, from its commencement in 1794 to the present month, I have been enabled to construct the following table. In consequence of some of our records being lost, and others imperfectly kept, it does not contain all the cases of tetanus which have been admitted into our hospital, or have occurred within its walls, but it contains all I could find; and seeing that it has been constructed solely from the journals of the hospital, consisting of daily, sometimes hourly reports, taken at the bedside of the patients, by numerous observers, at long distant intervals, I am certain it is as accurate as any table of the kind well can be. I may perhaps be permitted to add, that for these reasons it is more valuable than any table of cases of tetanus that I have met with. There has been no selecting, no recording because the patients recovered, but all are given.

To show that I do not undervalue the labours of those who have searched for and arranged "Published Cases," I have prepared a table containing 171 such cases, the largest, so far as I know, yet recorded. My object in so doing, was partly to confirm some of the conclusions which I have drawn from our Glasgow cases, and partly by contrast, to show how little as regards prognosis, and the results of treatment, inferences drawn from published cases, are to be relied upon. In preparing this table, I have been greatly assisted by that published by Mr. Curling, in his Essay on Tetanus. Of his table I have made liberal use; but I have not taken a single case on trust. I have examined the authorities for all the cases contained in it, and have added some particulars, especially the months in which the cases occurred, which are not given by Mr. Curling.

TABLE No. I.—GLASGOW CASES OF TETANUS.

No	Name	Sex M	Sex F	Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month & Year.	Appearance of Sympt.	Result, and what time after	Treatment
								Days	Days	
1	J. S.	1		—	Swelled joints, fistula ani, .		Sept. 1797	52	F. 4	Purgatives, opium, electricity, blister.
2	R. G.	1		23	Caries of tibia, bruise from horses' feet, ...	Granulations large, unhealthy, .	May, 1802	12	C.86	Opiates, warm bath, 6 bottles porter daily.
3	J. M.	1		9	Bruise of leg, wheel of cart, .	Sloughy, . .	July, 1804	8	F. 4	Opiates, cold bath.
4	W. L.	1		36	Wound on head, fall from cart,	Healing, . .	May, 1807	8	F. 3	Anodyne injections, cold affusion.
5	D. W.	1		26	Crushed fingers, ...	Doing well, .	Dec. 1807	15	F. 9	Laudanum, purgatives, wine, porter, and spirits, *ad. lib.*
6	J. M'D.		1	23	Wound l. fibula, ...	Edges hard, foul,	May, 1808	9	F.7½	V. S. purgatives, cold affusion, opiates.
7	J. M'G.	1		16	Nail in r. foot, ...	Suppurating, .	June, 1809	5	F. 1	Purgatives, laudanum, warm bath, cold affusion.
8	D. C.	1		19	Punctured foot by pitchfork, .	Nearly healed, .	Nov. 1813	16	F. 9	Purgatives, V. S. to 24 and 48 oz., warm bath, opiates.
9	F. C.		1	17	Spontaneous gangrene, feet & legs,	Gangrenous, .	June, 1814	15	F. 2	Leg amputated, opiates, purg. enema, stimulants.
10	E. M'K.		1	36	Wound on head, fall from cart,	Healing, . .	Sept. 1814	8	F. 7	Laudanum, wine freely.
11	J. C.	1		15	Cut toe, by glass, ...	Inflamed, . .	Oct. 1817	8	F. 6	Warm bath, purgatives, laudanum, toe removed, V. S. to 12 oz. blister, tobacco.
12	D. H.	1		45	Laceration of finger, iron hook,	Granu. after Slough.	Jan. 1818	11	C.25	V. S. 70 oz. warm bath, purgatives, blisters, opiates.
13	A. M'M.	1		45	Sole of l. foot pricked by nail,	Did not suppurate.	July, 1820	10	F. 3	V. S. 42 oz. calomel and opium, c. c. and blister to spine.
14	R. H.	1		14	Wound, rusty nail, calf of l. leg.	Scab, diffused hard swelling, .	July, 1824	8	F. 3	Strong sulphuric ac. to spine, purg., opiate enema, cal.c.opio.
15	J. F.	1		48	Fracture r. m. finger and ilium,	Suppurating, .	Feb. 1830	6	F.1½	V. S 24 oz. purgatives, blisters.
16	J. C.	1		24	Fracture femur, lacerated wound of leg, ...	Sloughy. . .	Mar. 1830	8	F. 3	V. S. purgatives, blister, opiates locally.
17	M. S.			43	Mamma removed, . . .	Nearly cicatrized,	Apr. 1830	15	F.10	Purgatives, blisters to spine, mercurial inunction, prussic acid, hyos. and laudanum.
18	P. V.	1		15	Scald, ...	Sloughy, . .	Apr. 1830	12	F. 5	Purgatives, laudanum, blister, opium, and calomel.
19	W. F.	1		17	Lacerated wound of finger, .	Gangrenous, .	July, 1830	7	F. 3	Calomel, leeches, blister, fingers amputated, purgatives acet. morphia gr. ½ o. h.
20	J. L.	1		18	Lacerated fingers. . . .	Gangrenous, .	Oct. 1831	9	F. 1	Blister, purgatives, turp. and opiate enemata, prussic acid.
21	M. M'C.		1	30	Lacerated fingers, . . .	Dry, . . .	Jan. 1832	13	C.28	V. S. 18 oz. purgatives, 40 leeches to spine, blister, prussic acid, opiate enema, laudanum.
22	H. C.	1		12	Lacerated thigh and leg (very severe,)	Sloughing, . .	May, 1832	8	F. 2	Purgatives, calomel, and laudanum.

No	Name	Sex M	Sex F	Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month & Year	Appearance of Sympt.	Result, and what time after	Treatment
								Days	Days	
23	H. M'L.		1	30	Burn, ...	Healthy, . .	July, 1832	12	F. 4	Purgatives, prussic acid, turp. enema, wine *ad. lib.*
24	R. B.	1		25	Smashed fingers, ...	Gangrenous, .	Jan. 1835	8	F.1⅓	C. c. and blister to spine, purgative, strychnia.
25	E. R.		1	15	Superficial wound on arm by machinery, ...	Sloughy, . .	Feb. 1839	12	F. 9	Purg., snow to spine, turpen. to wound, opiate enemata.
26	D. K.	1		50	Fracture of l. leg, lacerated wound ankle joint, ...	Sloughing, . .	Jan. 1840	7	F. 2	Opiates, poultices, cold to neck.
27	W. W.	1		36	Old ulcers of feet, ...	Slough separating,	Feb. 1841	—	F. 3	Laudanum, veratria ointment.
28	B. M'G.	1		24	Bruise of foot, railway waggon,	Healthy, . .	Oct. 1841	16	C.37	Purgatives, blisters.
29	A. M'L.	1		26	Lacerated wound in perinæum,	Sloughed & cleaned abcess during tetan	Apr. 1842	10	C.27	Purgatives, Tk. opii, digitalis, V. S. wine, warm Bath.
30	J. K.	1		37	Smashed foot, ...	Sloughing nearly completed, .	Oct. 1843	8	F. 8	Enem. turp. et Tk. assafœt, whisky, blisters.
31	W. D.	1		14	Smashed fingers, ...	Sloughs separating,	Aug. 1845	6	F.1⅓	Indian hemp, opium, stimulants *ad lib.*
32	J. B.	1		29	Smashed foot by metal, . .	Parts partially removed, sloughing,	Oct. 1845	8	F. 4	Purgatives, ice to spine, cannabis ind., prussic acid, opiates, stimulants.
33	J. L.	1		26	Burn of trunk and shoulders, .	. . . . .	Jan. 1846	6	F. 2	Acet. Plumb. opium, acet. plumb. and Tk opii to burn, whisky *ad lib.*
34	E. A.	1		19	Laceration of arm by carding machine, ...	Surface looks healthy, . .	Mar. 1847	7	F. 5	Calomel, chloroform, opium, wine and beef tea by injec.
35	R. M'L.	1		—	Skin over patella roasted, clothes not burnt, ...	Slough, . .	Mar. 1847	9	F.1½	Ether freely, cannab. ind.
36	D. G.	1		—	Compd. fracture of tibia, and fracture of fibula, . .	Improving, .	Sept. 1847	6		Digitalis, opiate enema.
37	A. M.		1	8	Puncture of foot by piece of old coffin, ...	. . . . .	Oct. 1847	8	F. 3	Ether, turpentine enema, blister.
38	W. F.	1		29	Fire damp burn on face and hands,	. . . . .	Dec. 1847	11	F.1½	Chloroform.
39	R. G.	1		50	Both nasal bones broken by a fall,	. . . . .	Mar. 1848	8	F. 4	Purgat., C.c. 8 oz. tobacco, morphia, chloroform.
40	A. S.			19	Extraction of two teeth, . .	. . . . .	June, 1848	2	C.46	Purgatives, chloroform, tobacco, belladonna.
41	B. D.	1		26	Fracture of thigh and leg and lacerated wound of leg, .	Favourable, .	Mar. 1849	11	F. 2	Purgatives, enemata, chloroform, whisky.
42	W. H.	1		29	Gangrene of fingers after lacera.	Healthy, . .	Apr. 1849	17	F. 2	Fingers amputated, chloroform, sulph. zinci, opiate enema, blisters, actual cautery to neck.
43	J. F.	1		35	Lacerated fingers, . . .	Going on well, .	Sept. 1849	12	—	Purgatives, ice to spine.

No	Name	Sex M	Sex F	Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month & Year	Appearance of Symps. Days	Result, and in what time after Days	Treatment
44	A. M'D.	1		50	Operation for popliteal aneurism, and amputation, . . .	Sloughing, . .	Nov. 1851	5	F. 2	Ind. cannab. chloroform, ice to neck, injec. beef tea, wine, and ind. cannab. o. h.
45	J. H.	1		25	Smash of left first finger, .	Inflamed, . .	May, 1852	8	F.1½	Amputation of fingers after tetanus, chloroform, purg. and opiate enemata.
46	P. M'G.	1		6½	Injury of head, abrasion of chest,	No actual wound,	Oct. 1852	2	—	Little treatment, left the house dying.
47	D. M'C.	1		80	Bruise of legs, gangrene of right leg, amputation, . .	. . . . .	Jan. 1853	1	F. ⅓	Beef tea, wine, and opiate enemata, tracheotomy.
48	D. R.	1		47	Wound on the scalp, . .	. . . . .	Jan. 1853	4	F.1⅓	Enema Tk. cannab. ind. and Tk. opii, chloroform, ice.
49	J. C.	1		30	Burn from gunpowder over trunk and thighs, . .	. . . . .	Feb. 1853	7	F. 2	Tk. opii, wine, warm bath.
50	A. L.	1		42	Wound on the forehead, . .	. . . . .	Mar. 1853	12	F. 7	Purgatives, iodide of starch, laryngotomy,
					IDIOPATHIC TETANUS.					
1	J. K.	1		80	Exposure to cold and wet, .	. . . . .	Feb. 1844		C.25	C. c. 12 oz. blisters, purg. Indian hemp, ice to spine, blisters, opiates, hydrocyan. acid, stimulants.
2	A. C.		1	18	Subject to hysteria, . .	. . . . .	Apr. 1853		F. 5	Purgat. chlorof. and electricity to spine, tartar emetic.

Of the 52 cases contained in the above table, 50 were traumatic, 2 idiopathic.

In order to economize space, the tables have been as much as possible condensed, and abbreviations introduced, which, however, will be easily understood, such as r. right, l. left, m. middle, f. fatal, c. cured, &c. The column headed "Appearance of Symptoms," shows the number of days which elapsed between the infliction of the injury, and the first appearance of the symptoms of tetanus.

TABLE No. II.—PUBLISHED CASES OF TETANUS.

(*c*) Cases in Mr. Curling's Table.

No	Name	Sex		Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt.	Result, and in what time after	Treatment	Authority
		M	F								
c 1	—	1		10	Gunshot wound, calf of r. leg,	Favourable, .	October,	Day 5th	Days F. ¾	Purgatives, opium, tartar emetic, bath.	Curling on Tetanus, 31
c 2	T. M.	1		21	Finger r. hand injured by nail,	Healed 16 days after injury, .	Decem.	16	F. 4	Purgatives, opiate injections.	Do. 88
c 3	—	1		30	Severe contusion of fingers of r. hand, ...	Favourable, .	—	14	C.21	V. S. opium, calomel.	Do. 143
c 4	T. M.	1		22	Compd. dislocation, great r. toe,	Favourable, .	October,	10	F.14	Opiate injections, stimulants.	Do. 158
c 5	S. P.	1		42	Thigh wounded by iron spike,	Favourable, .	—	9	F. 3	Opium, tobacco.	Do. 169
c 6	—	1		26	Blow on head and thrown into a canal, ...	Healing, . .	—	4	F. 9	Mercury, opium, tobacco.	Do. 170
c 7	—	1		19	Sole foot injured by nail, .	Healed 16 days, .	July,	16	C.	Purgatives, opiate inj., stimul.	Do. 194
c 8	—	1		31	Compound dislocation of astragalus and os naviculare, .	Severe injury, .	—	7	F. 2	Hydrocyanic acid.	Do. 199
c 9	—	1		22	Fracture of tibia and tarsus with laceration, ...	Healthy, . .	August,	8	F. 2	. . . . .	Travers on Const. Irrit. 2, 313.
c10	—	1		18	Two fingers amputated, gunshot wound, ...	Going on well, .	Septem.	10	F 3	Purgatives, belladonna.	Do.
c11	—	1		38	Fracture, both bones left leg, .	Discharge abundant	Novem.	23	F. 4	. . . . .	Do.
c12	—	1		48	Foot injured by rusty nail, .	Wound enlarged,	July,	7	F.	Belladonna.	Do.
13	—	1			Compd. fracture both bones forear.	Doing well, .	May,	7	F.	Mercurial oint. inunc. purgat.	Do. 2, 314
14	—	1			Fracture 3d phalanx mid. finger.	Amputated 17 days after injury, .	January,	17	F. 4	V. S. 20 oz. calomel, belladon. and colchic. wine freely.	Do. 2, 314
15	—	1			Simple fracture, thigh, . .	Doing well, .	—	4	F. 8		Do. 2, 315
16	S. P.		1	43	Knee painful and swollen, .	Superficial ulcers near patella, .	May,	35	F.14	Purgatives, tobacco, stimuli.	Do. 2, 323
17	—	1			Scirrhous testis removed, .	Whole cord tied.	—	—	F.10		Do. 2, 320
c18	J. S.	1		40	Amputation of leg, . .	. . . . .	March,	5	F. 1	V. S.	Parry's Cases of Tetanus.

No	Name	Sex		Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt.	Result, and in what time after	Treatment	Authority
		M	F								
								Day	Days		
c19	W. G.	1		5¼	Lacerated wound of instep, 1st toe fractured, . . .	Sloughed, . .	October,	8th	F. 1	Opium, cold affusion, antim.	Parry's Cases of Tetanus.
c20	W. C.	1		30	Laceration, skin of leg, . .	Sloughed, . .	March,	20	C.10	Opium, mercury.	Do.
c21	A. A.		1	22	Toes frost bitten, . . .	Sloughing, . .	February,	—	F. 2	Opium, mercury.	Do.
c22	P. G.	1		30	Fall on nose, excoriation and epistaxis, ...		Novem.	5	F. 7	Opium, warm baths, cautery.	Larry's Memoirs, 1, 241
c23	M.	1		27	Gunshot wound r. hand, .	. . . . .	April,	30	C.30	Op., warm baths, camph. musk.	Do. 1, 250
c24	M. B.	1		—	Gunshot wound left foot, .	. . . . .	October,	14	C.	Amputation.	Do. 1, 265
c25	Negress		1	24	Foot wounded by broken glass,	. . . . .	January,	8	F. 5	V. S. mercury, opium, stimulants, warm bath.	Morrison on Tetanus.
26	A.	1		—	Flogging, ...	Bruised, . .	February,	12	C. 7	Tk. op., warm bath, calomel and opium, wine.	Do. 102
27	F.	1		—	Puncture by nail, . . .	Suppurating, .	April,	9	C. 7	Purgatives, calomel and opium, Tk. opii, brandy.	Do. 107
28	W. T.	1		38	Abrasion of finger, . . .	Nearly healed, .	August,	—	C.33	Large doses quinine, and stim.	Bright's Med. Report, 1, 111
29	W. A.	1		24	Fractured tibia and fibula, .	Healthy granulation after slough.	August,	26	C.34	Purgatives, opiates, hyoscy. sub. carb. iron.	Do. 1, 119
c30	H. S.	1		14	Bite by dog on leg, . .	Foul & spreading,	Novem.	7	C.30	Purgatives, mercury, opium, leeches, tonics.	Do. 2, 558
c31	—	1		15	Heels lacerated, and humerus fractured, ...	. . . . .	October,	7	F.1¼	Musk, purgatives, opiate injec.	Do. 572
c32	—	1		22	Sole of foot wounded by nail,	Dry, not inflamed,	June,	5	F. 4	Opium, blisters, antimony.	Do. 573
c33	M. B.		1	80	Cut on thumb, . . .	Said to be healed,	May,	5	F.19	Leeches, opium, ant. mer. zinc.	Do. 575
34	J. A.	1		45	Blow on side of head, . .	Bit of bone removed.	Decem.	28	F.28	Purgatives, tobacco, turpen.	Do. 579
c35	J. F.	1		13	Feet torn by machinery, .	Sloughing exten.	August,	9	C.42	Purg., turp. inj., leeches, tobac.	Dublin Hosp. Report, 3, 357
c36	S. G.	1		40	Lacerated wound left arm, .	. . . . .	January,	5	F.1¼		London Med. Repos., 14, 1
c37	J. T.	1		25	Slight wound on r. outer ancle,	Almost closed, .	October,	7	C.42	Dover's powders, purg., tonics.	Med. Transactions, 4, 29
c38	—		1	50	Compound fracture leg, . .	Perfectly healed,	October,	21	C.85	Opium, mercury.	Medico-Chir. Transac., 2
c39	S. J.	1		35	Contused wound forehead, .	Healed in 10 days,	February,	24	C.35	Mercury, purg., opium, stimul.	Do. 2, 284
c40	J. C.	1		30	Amputation of two fingers, .	Nearly cicatrized,	June,	11	F. 2	Opiate injections.	Do. 7, 468
c41	W. M.	1		30	Amputation of leg, . . .	Stump looked well,	Decem.	13	F. 8	V. S. warm bath, mercury.	Do. 7, 470
c42	W. H.	1		—	Amputation shoulder joint, .	Healthy, . .	Decem.	12	F. 2	Warm bath, opium.	Do. 7, 473
c43	—	1		19	Slight wound left hand, .	Nearly healed, .	Novem.	18	C.24	V. S. warm bath, purgatives, Dover's powders.	Do. 11, 384

No	Name	Sex M	Sex F	Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt.	Result, and in what time after	Treatment	Authority
								Day	Days		
c44	C. F.	1		45	Compd. dislocation of great toe,	. . . . .	Decem.	14th	C.10	Turpen., carb. of iron, musk, stimulants.	Do. 15, 163
c45	B. M.	1		44	R. thumb crushed, . . .	. . . . .	Novem.	9	C.25	Turpentine, carbonate of iron.	Do.
c46	Negress		1	40	Cupping on temples, . .	. . . . .	July,	6	C.	Purgatives, tobacco.	Ed. Med.-Chir. Trans., 1, 184
c47	Negress		1	45	Incised wound of hand and fingers	Doing well, .	Decem.	13	C.42	Purgatives, tobacco.	Do.
c48	Negro	1		18	Slight contusion of toe, .	. . . . .	April,	10	F. 3	Purgatives, tobacco.	Do. 2, 366
c49	Negro	1		12	Punctured wound of thumb,	. . . . .	February,	—	C.30	Purgatives, tobacco.	
50	E. W.	1		—	Sole of l. foot wounded by a nail,	Apparently well,	August,	11	F. 9	Cold affusion, tonics, warm bath, electricity, mercury.	Med. Facts and Obs., 7, 267
c51	J. P.	1		15	Fracture and laceration, bones of thumb, ...	Mortified, . .	Novem.	6	F. 2	V. S. purgatives, opium, cold affusion, mercury.	Trans. Col. Phy. Ire., 4, 275
c52	M. B.	1		60	Slight wound ear and temple,	. . . . .	April,	8	F. 6	Purgatives, tobacco, opium.	Do.
c53	J. G.	1		42	Lacerated wound of thumb, .	. . . . .	Decem.	9	F. 8	Tobacco, mercury.	Do.
c54	M. F.	1		24	Contusion and slight laceration on r. shin, ...	Nearly healed, .	August,	21	C.14	V. S. purgatives, mercury, antimony, opium, stimulants.	Do.
c55	W. G.	1		16	Blow on back of neck, . .	No wound mention.	March,	2	F. 2	C. c. croton oil, opium, belladonna.	Med. Gazette, 1, 645
c56	J. T.	1		25	Laceration little toe, . .	Healed, . .	March,	10	F.14	Purg., merc., opium, antimony, musk, turpen., belladon.	Do. 1, 646
c57	W. H.	1		14	Sole of ft. wounded by iron spike,	. . . . .	July,	11	F. 2	Cold affusion, sulph. quin., prus. acid.	Do. 2, 343
c58	M. U.		1	28	Tendon peron. long. exposed by ulcer, ...	Exposing Tendon,	June,	1 h	C. 2	V. S. leeches, warm bath, mercury, morphia.	Do. 2, 384
c59	L.	1		21	Wound in sole of foot by nail,	Said to be healed,	Novem.	16	F.10	V. S. leeches, opium, musk, mercurial friction.	Do. 6, 830
c60	J. C.	1		70	Contusion of r. hand with fracture three metacarpal bones,	Sloughed, . .	October,	10	F. 2	Blisters, turp. injects., carb. of iron.	Do. 7, 883
c61	W.		1	40	Lacerated wound palm of l. hand	Sloughed, . .	October,	11	C.14	Opium, mercury, turpentine.	Do. 7, 428
c62	R. G.	1		21	Lacerated wound of integuments of leg, ...	Healthy, . .	January,	16	F. 7	Opium.	Do. 7, 728
c63	W. P.	1		15	Foot wounded by rusty nail, .	Great pain, .	August,	1	C. 3	Divided nerve, op., camph. V.S.	Do. 11, 623
c64	—	1		10	Fracture both bones r leg, laceration of integuments, . .	Sloughing, . .	Decem.	9	F. 2	Nerve divided, croton oil, op., antimony, tobacco, cautery.	Do. 12, 15

No	Name	Sex		Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt.	Result, and in what time after	Treatment	Authority
		M	F					Day	Days		
c65	R. I.	1		43	Fractures of l. leg, crista of ilium, and great toe of r. foot with laceration, ...	Suppurating, .	May,	10th	C.30	Bark, opium, carbonate of iron.	Med. Gazette, 12, 799
66	J. C.	1		26	Blow or sprain on back (no wound)	. . . . .	August,	12	C.19	Purgatives, tobacco injs. quinine, ether.	Do. 24, 927
67	E. H.	1		37	Prick on foot from nail, . .	. . . . .	February,	24	F. 7	V. S. steel, camphor, and op.	Do. 27, 41
68	J.	1		29	Attempt by quack to reduce supposed dislocation of ankle, blister of surface, . .	Blister, . .	Novem.	19	F. 7	Calomel, Dover's powders, vapour bath, steel, hydroc. acid, wine.	Do. 27, 458
69	G. C.	1		33	Blow on l. side, (no wound,) .	. . . . .	May,	49	C.24	Purgatives, tobacco.	Do. 27, 582
70	T. S.	1		14	Deep cut great toe, . .	Inflamed, . .	Novem.	7	F. 2	Leeches to neck, purgatives, cannab. ind., hydrocyanic ac.	Do. 35, 827
71	M. B.		1	55	Contused wound temple and forehead, ...	Inflamed, . .	January,	5	C.35	Purgative, argent. oxid., camph. et opii.	Do. 1846
72	J. S.	1		33	Laceration of l. cornea from whip,	. . . . .	January,	6	F 2	Ether.	Do. 1837, 1006
73	Negress		1	25	Sole of foot pierced by bamboo,	Healed, (swelling in groin,) . .	Decem.	12	C.11	Salivation, quinine, morphia.	Do. 1851, 724
74	—	1		30	Compound fracture of leg, .	Healthy, . .	Decem.	14	C.14	Stimulants, ether, opiate enemata, camph. purg.	Medical Times, 12, 84
75	B. L.	1		23	Punctured wound of thumb, .	Suppurating, .	Novem.	21	C. 7	Purg., calom., and opium.	Do. 12, 312
76	J. B.	1		42	Penetrating wound of little finger,	. . . . .	Decem.	17	C.27	Incision, cal. and op., morphia, stimulants, purgatives, tobacco, cannab. ind.	Do. 12, 312
77	G. M.	1		42	Compd. commin. fract. metacarp.	Suppurating, .	February,	21	F.16	Purg., morphia, leeches, stim.	Do. 14, 294
78	—	1		30	Index finger crushed, . .	Gangrene of finger,	Novem.	35	F. 2	Ether, chloroform, Tk. opii.	Do. 18, 176
79	J. S.	1		9	Incised wound of l. index finger,	Cicatrized, . .	Novem.	7	C. 2	Cold affusion, ether.	Do. 18, 258
80	D. N.	1		44	Scratch of heel, . . .	Inflamed, . .	May,	16	F. 4	Leeches, blister, ice to head, purgatives, opiates, hyoscy.	Do. 22, 10
81	S. C.	1		7	Struck by stone on side of eye,	Cicatrized, . .	Novem.	16	C. 9	Purgatives, leeches, ind. hemp, belladonna, blister and antimony to whole spine.	Do. 25, 450
82	R. H.		1	21	Prick of hand by furze prickle,	Inflamed in palm,	February,	11	C.16	Quinine, full diet, purgatives, cannab ind. to spine.	Med. Times and Gazette N.S., 5, 188

No	Name	Sex		Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt.	Result and in what time after	Treatment	Authority
		M	F								
								Day	Days		
83	—	1		26	Nail into great toe, . .	. . . . .	April,	13th	C.35	Morph., V. S. C.c. tobac., chlo.	Do. 5, 507
c84	E. D.	1		14	Extensive wound on r. leg and slight wound on outer ankle of l. leg, ...	Healthy, . .	June,	10	F.12	Opium, stimul., cantharides, cold aff., mercury.	Med. & Phy. Jour., 14, 129
c85	—	1		16	Wound on hip by splinter, .	Foul, . . .	October,	5	F. 4	Warm bath, mercury.	Do. 21, 181
c86	J. K.	1		—	Compound fracture of leg, .	. . . . .	October,	10	F. 4	Mercury, amputation.	Do. 22, 120
c87	W. T.	1		25	Elbow joint shattered by a ball,	Inflamed, suppur.	July,	22	C. 7	Amputation.	Do.
c88	J. W.	1		20	Severe contusion of r. thumb,	. . . . .	October,	15	F. 2	V. S. op., merc., warm bath.	Do. 22, 324
c89	L.	1		23	Sole of foot wounded by rusty nail,	Inflamed, . .	February,	8	F. 5	Mercury, division of wounded parts.	Do. 22, 185
c90	J. M.	1		—	Wound on great toe by hand saw,	. . . . .	January,	10	C.56	Op., warm bath, stim., merc.	Do. 22, 396
c91	T. P.	1		46	Compound fracture of thigh, .	Much inflamed, .	October,	21	C.	Mercury, opium.	Do. 22, 479
c92	M. M.		1	52	Wounded in l. cheek by arrow,	. . . . .	April,	2	C.80	Opium, purgat., merc., antim.	Do. 24, 40
c93	J. M.	1		13	Punctured wound of leg, .	Inflamed & painful,	October,	9	C.	Purgat., opium, mercury, cold affus., V. S. stimulants.	Do. 37, 19
c94	J. W.	1		49	Punctured wound of thumb, .	. . . . .	January,	8	C.	V. S. purgat. opium.	Do. 37, 28
c95	A. B.	1		58	Incised wound on back of hand,	Healed, . .	March,	21	C.85	Opium, warm bath, camphor, hyos. V.S. purgat., mercury.	Do. 48, 192
c96	F. M.	1		50	Wound by nail in sole of l. foot,	Healed, cicatrix indurated & painful,	June,	10	C. 4	V. S. merc., purg., warm bath.	Do. 46, 538
c97	J. J.	1		20	Incised wound extremity of finger,	Sloughing, . .	Septem.	16	C.35	Opium, purgat. blisters, hyos.	Do. 50, 446
c98	J. K.	1		14	Fracture of radius and laceration of integuments of r. leg, .	. . . . .	July,	16	C. 7	Purgat. leeches, carb. ir. mer., opium, antim. cold affus.	Do. 62, 220
99	W. L.	1		40	Laceration of leg, . . .	. . . . .	Decem.	17	C.	Purgat. warm bath, antimon. bath, incision, V. S. 30 oz.	Lancet, 1832, 585
100	C. P. J.	1		18	Gunshot of thigh, . . .	Inflamed, . .	May,	5	F.1½	Calomel and op., mercurials.	Do. 1836-7, 1, 297
101	A. T.	1		42	Puncture rusty nail sole of foot,	. . . . .	October,	7	F. 4	V. S. Purgatives.	Do. 1837-8, 201
102	—	1		42	Severe contus. and abras. of hand,	. . . . .	January,	6	F.1½	V. S. calom. and op., camph.	Do. 387
103	—	1		—	Injury of thumb nail, . .	. . . . .	January,	4	C.12	Purgat. calom. and op.	Do. 1838-9, 1, 672
104	V.	1		29	Lacerated wound of foot, .	Healthy, after sloughing,	April,	18	C.29	Morph. camph. and hyoscy. Purgat. opium, stimulants.	Do. 761
105	E.	1		—	Wound of arm, . . .	. . . . .	Novem.	6	F. 1	Calomel, morphia, acet. lead and opium to arm.	Do. 1840, 117

No	Name	Sex M	Sex F	Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt. Day	Result, and in what time after Days	Treatment	Authority
106	J. F.	1		18	Cut of hand,		February,	20th	C.	Calom. and op., V. S. to 20 oz. and 30 oz. purgat.	Lancet, 1841, 153
107	P. P.	1		8	Crushed toe,	Unhealthy,	July,	7	F. 5	Toe amput., purgat. leeches, blister, calom. op. warm bath.	Do. 1844, 327
108	C. P.	1		17	Lacerated wound of hand,	Healthy,	January,	12	F.17	Purg. morph. blisters, alcohol freely.	Do. 1845, 317
109	—	1		30	Com. fract. tibia and fibula,	Healthy,	Decem.	14	C.14	Brandy, 3 pints in 24 ho. opiates, quin. ammon. and cam.	Do. 648
110	—	1		—	Lacerated wound of thigh,		Novem.	12	F. 4	Cannab ind.	Do. 1845, 1, 36
111	J. B.	1		30	Kick on face by horse,		Septem.	27	C. 5	Tobacco purgat. V. S.	Do. 1846, 1, 39
112	F. B.	1		11	Blow with stick over loins,	No wound,	October,	4	C.10	Wet sheet and cold bath.	Do. 1, 154
113	C. G.	1		11	Lacerated wound of knee,	Suppurating, healed in 18 days,	August,	29	C.18	Belladon. cal. et op. purgat. aconite locally.	Do. 1, 246
114	W. E.	1		24	Gunshot wound left forearm,		Decem.	21	C.33	Aconite large doses.	Do. 1, 394
115	M. S.	1		60	Contused wound, r. great toe,		April,	10	F. 1	Purgat., aconite large doses, tobacco.	Do. 1, 494
116	J. A.	1		31	Coal waggon injury of foot. Gangrene. Amputation,	Stump Healthy.	May,	6	F. 1	Purgat. Tk. opii and beef tea enemata, croton oil to back.	Do. 2, 141
117	C. S.	1		10	Blow on lip,		January,	7	F. 1	Chloroform, Tk. opii, extract. belladon. locally, op. supos.	Do. 1848, 1, 259
118	S. H.	1		—	Ring finger torn off,	Hand inflamed and swollen,	March,	5	C. 5	Chloroform, purgat., (finger amp. after cure of tetanus.)	Do. 1, 610
119	B. D.	1		22	Amputation of foot,		Novem.	14	C.26	Ether, morphia.	Do. 2, 309
120	M. B.		1	23	Inflamed bursa opened,		October,	16	F. 7	Calom. and op., aconite local.	Do. 1850, 2, 601
121	F. H.	1		12	Burn by fire,		Decem.	7	F. 1	Ammonia, tincture of bark.	Do. 1851, 1, 408
122	M. C.		1	36	Abortion,		Novem.	7	F. 3	Purgatives, injec. of tobacco, cannab. India and op.	Jour. of Med. Scie., 1850, 387
123	M. E.		1	—	Ext. of tooth, and rem. of stump,		Decem.	1	C.11	Leeches, blister, Tk. opii calom. and Dover's powders.	Jour. of Med. Scie., 1842, 422
124	D.	1		18	Lacerated wound of leg,		February,	10	C.24	Cannab. Ind. large doses.	Do. 1843, 250
125	E. D.		1	7	Injury of finger,	Never promised well	October,	19	C.30	Purgat. cannab. ind. finger amputated, ice to neck, stim.	Do. 1845, 22
126	B. L.	1		20	Gunshot wound in leg,	Doing well,	January,	31	C.11	V. S. calom., tartar antim., opium and camphor.	Do. 1846, 304

No	Name	Sex		Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt.	Result and in what time after	Treatment	Authority
		M	F					Day	Days		
127	A. P.		1	44	Lacerated wound of arm, .	Unhealthy, .	Novem.	9th	C.54	Purgat. stimul., Tk. opii tobac.	Do. 650
c128	E. E.		1	22	Sole of l. foot wound. by a thorn,	All but healed, .	Septem.	21	C.	Blisters, merc. op. cold affus.	Ed. Med. & Sur. Jour. 1, 294
c129	C. W.	1		30	R. hand wounded by pistol ball,	Nearly healed, .	May,	7	C.30	Opium, cold bath, digit., stim.	Do. 7, 14
c130	M. M'G	1		22	Wnd. of elb. joint by musk. shot,	. . . . .	May,	16	C.30	V. S. opium, amput., warm bath, mercury.	Do. 8, 412
c131	Negro	1		20	Laceration left foot. . .	Sloughed, . .	May,	15	C.42	Op., warm bath, tobac. stimul.	Do. 11, 198
c132	J. M.	1		15	Severe lacerated wound left leg,	Unhealthy, .	February,	10	C.21	Mercury, op. stim., tonics.	Do. 11, 306
c133	G. P.	1		27	Wound on left leg, . .	Nearly healed, .	June,	14	C.42	Opium, stimulants, tonics.	Do. 11, 422
c134	R. M.	1		20	Two mus. shot wounds in l. arm,	Perfectly healed,	August,	31	C.31	Opium, stimulants.	Do.
c135	J. B.	1		25	Bite on thigh, . .	Much inflamed and swollen, . .	April,	2	C.14	Purgat., opium, merc., stimul.	Do. 13, 451
c136	R. T.	1		8	Severe burn on right hand,	Sloughed, . .	April,	10	C.30	Amputation.	Do. 17, 394
c137	J. W.	1		20	Contusion of abdomen, .	Bruise, no wound mentioned, .	Septem.	17	C.30	V. S. opium, blisters, merc.	Do. 18, 191
c138	W. B.	1		14	Laceration of hand, . .	. . . . .	July,	12	F.10	Amputation, opium, merc.	Do. 21, 292
c139	E. W.	1		15	Severe compd. fracture of thumb,	Inflamed & suppur.	April,	14	C.14	Purgat., tobac.. leeches, mer.	Do. 24, 277
c140	J. K.	1		—	L. arm wounded musket ball,	Looking well, .	October,	7	F. 1	Opium, mercury.	Do. 30, 21
c141	G.	1		16	Arm shot away by cannon, amputation at shoulder joint 5 days afterwards, . .	. . . . .	October,	21	C.30	Purgat., opium, merc., stim.	Do. 30, 28
c142	J. A.	1		44	Severe laceration hand & fingers,	Sloughed, . .	Decem.	10	F. 2	Mercury, opium, blisters.	Med. Quar. Rev. 4
143	J. N.	1		21	Fracture of 2d phalanx l. thumb,	. . . . .	February,	21	C.15	V.S 16 oz., (1½ lb. carb. iron in 14 days) tonics, blisters.	Johnson's Med. Rev. 7, 48
144	P. C.	1		15	Amputation (malignant disease of heel), ...	. . . . .	January,	9	F. 3	Repeated bleedings.	Med. Chir. Rev. 10, 261
145	G. A.	1		45	Run over by cart, cut on ear, fractured clavicle, . . .	Favourable, .	July,	15	C. 7	Chloroform, morph. and calom.	Half-yearly Abstract of Medical Science, 10, 36
146	W.	1		25	Foot punctured by thorn, .	Not inflamed, .	January,	—	C. 8	V. S. 16 oz. morph. act. caut.	Do. 11, 141
147	—	1		26	Injury to toe by nail, . .	. . . . .	May,	—	C.14	Morph. V. S. C. c. tobacco, mercurials, chlorof. freely.	Do. 17, 68
148	J. F.	1		25	Compd. fracture of arm, .	Suppurating, .	May,	18	C.34	Purgatives, opium.	Pror. Med. & Sur. Jor. 1, 416
149	J. F.	1		42	R. mid. finger crushed, . .	. . . . .	January,	12	F. 2	Purgatives, cannab. ind. assafœt. calomel, liq. ammoniæ fort. to spine.	Do. 1845, 113

No	Name	Sex M	Sex F	Age	Nature of the Injury	State of the Wound at first Symptoms of Tetanus	Month	Appearance of Sympt.	Result, and in what time after	Treatment	Authority
								Day	Days		
150	A. S.	1		63	Finger fractured and bruised, .	Sloughed, . .	Decem.	*7th*	F. 5	No remedies taken.	Glasgow Med. Jour. 1, 253
151	W. B.	1		12	Tied on back of horse with cords round ankles, . . .		August,	2	C.26	Cannab. Ind., wine, mercury, bellad. to spine.	Dublin Journal, 6, 2
152	P. F.	1		45	Burn of lower limbs in lime kiln,	Suppurating, .	March,	10	F. 1	Cannab ind. stimulants.	Do. 6, 9
153	M.	1		28	Bruise of finger, . . .	Suppurating, .	Decem.	28	C.30	Mercury, cannab ind. bellad. stimulants, aconite locally.	Do. 6, 11
154	C.	1		30	Compd. fracture of r. leg, .	. . . . .	October,	13	F. 4	Opiates, stimulants, cannab. ind. belladonna to wound.	Do. 6, 15
155	P. C.	1		25	Smashed great toe, . . .	. . . . .	July,	4 h	C. 4	Tobacco to wound, stimulants.	Do. 10, 66
156	F. C.	1		12	Comp. fracture bones r. forearm,	Unhealthy, .	July,	5	F 2	Tk. opii purgat., belladon, chlor. Cannab. Ind. wine *ad lib.* assaf. enema.	Dublin Med. Press, 22, 83
157	T. B.	1		6	Comp. fracture of humerus,	Gangrenous, .	August,	6	F. 1	Calcmel and warm bath.	Do. 26, 102
158	J. K.	1		8	Needle into heel, . .	Tender, causing convulsions, . .	June,	8	F. 1	Calomcl, mercury, chloroform.	Do. 26, 68
159	M. C.		1	35	Ligature of piles, . .	. . . . .	October,	6	F. 1	Morphia, quinine, chloroform.	Do. 27, 45
160	J.	1		35	Lacerated wound of great toe,	. . . . .	May,	2	C.49	Opium, morphia, chloroform.	Do. 29, 168
161	Z. L.		1	19	Cut of finger. . . .	. . . . .	June,	2	C.14	C. c. and blisters, laud. narcot.	American Journal, 16, 24
162	Negress		1	15	Puncture of foot by pot hook,	Nearly healed, .	March,	4	C.27	V. S. Tk. opii purgat.	Do. 18, 529
163	J. B.	1	1	32	Burns on feet by caustic potash,	Cicatrizing, .	May,	33	C.28	Assafœtida in large doses.	Do. N.S. 2, 344
164	M. C.			38	Retained placenta, . .	. . . . .	Septem.	7	F. 1		Do. 3, 100
165	Negro.	1		18	Toe cut by glass, . .	The inflamed wound cicatrizing, .	March,	14	C. 2	V. S. incision of cicatrix, laud.	Do. 3, 498
166	Negress		1	15	Wound of foot by splint. of wood,	Cicatrized, .	Novem.	15	F. 1	Splinter of wood rem. Tk. op.	Do. 3, 499
167	Mulatto		1	14	Wound of foot by nail, .	Nearly healed, .	August,	9	C. 4	Cicatrix opened, cal. et opii morphia, assafœtida.	Do. 3, 500
168	Negress		1	12	Wound of foot by nail, .	. . . . .	May,	12	C.14	Extraction of splinter, quinine large doses, morphia, stim.	Do. 6, 376
169	J. S.		1	28	Splinter of wood in thumb, .	. . . . .	Septem.	18	C.38	Removal of splinter, stim. morph. laud., assafœt., colchic.	Do. 15, 351
170	J. H.	1		—	Compound disl. of ankle joint,	Inflamed, sloughing,	April,	12	F. 4	Amputation, chloroform.	Do. 17, 206
171	D. L.	1		27	Slight wound of thumb by saw,	Doing well, .	March,	5	C. 6	Chloroform, poultice.	Do. 18, 75

From the above tables the following inferential tables and conclusions may be drawn :—

Years in which the Glasgow cases occurred :—

In 1797 one case, 1802 one, 1804 one, 1807 two, 1808 one, 1809 one, 1813 one, 1814 two, 1817 one, 1818 one, 1820 one, 1824 one, 1830 five, 1831 one, 1832 three, 1835 one, 1839 one, 1840 one, 1841 two, 1842 one, 1843 one, 1845 two, 1846 one, 1847 five, 1848 two, 1849 three, 1851 one, 1852 two, first six months of 1853 four.

Of the idiopathic cases one occurred in 1844, and one in 1853.

I do not pretend to give *all* the cases which have occurred in the hospital, but as I have given all that I could find, I have at least made an unbiassed approximation to the truth. So far as it goes, the table confirms a statement which I have frequently made, that tetanus at times assumes almost an epidemic character. I have had as many as three acute cases under treatment at the same time. In 1847 the table gives five cases; in 1849, three; and in the first six months of 1853, five.

The next table shows the months in which the cases occurred, distinguishing the Glasgow from the published cases :—

Months in which the Cases of Tetanus occurred.

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Not Stated.	Total.
Published Cases,	16	12	10	12	16	8	11	13	7	22	19	19	6	171
Glasgow Cases,	6	5	6	4	5	3	5	1	4	7	2	2	...	50
	22	17	16	16	21	11	16	14	11	29	21	21	6	226

An opinion has long been entertained, that tetanus is more common in hot than in temperate and cold climates, and in Europe that it is more frequent in summer than in winter. Alternations of temperature have also been supposed to have great influence in its production. On this subject Larry says (Clinique, t. i. p. 90,) that the wounded exposed to the cold moist air of "les vents nord—nord-ouest, surtout pendent printemps, contractent facilement le tetanos, cet accident au contraire parait rarement lorsque la temperature est a peu pres egale, soit in hiver, soit en ete." A statement nearly similar is made by Dupuytren, and many English writers. When we turn to our tables, we do not find that they fully confirm either of these opinions. Taking the Glasgow cases as the most correct, we find August and June, two hot months, give 4, while January and February give 11. If we arrange the months into four cold, January, February, November, and December, we find 15 cases; four warm, May, June, July, and August, we have 14; and four temperate, March, April, September, and October, we have 21. When we turn to the "published cases," we find the 4 winter months give 66, the four summer 48, and the four temperate 51. Thus both tables combined, make the disease least frequent in summer, and most common in winter. The individual months show considerable eccentricity, but still confirming the same inference, January being one of the largest, June and September the two smallest.

Has season any influence on the mortality of tetanus? In the Glasgow table the number of recoveries is so small that almost necessarily those months which show the largest number of cases exhibit the greatest amount of mortality—two recovered in January, and one in April, May, June, and October, each. Of the 90 recoveries in the "Published Cases," there were in January 6, February 8, March 6, April 8, May 10, June 4, July 6, August 10, September 4, October 9, November 8, December 11. If we arrange the months, as we have already done, we find the four cold months give 66 cases—of which 33 recovered, and 33 died; the four temperate months 51, of whom 27 recovered, and 24 died; the four summer months 48 cases, with 30 recoveries, and 18 deaths. It would thus appear, that the winter months give the largest number of cases, and the highest ratio of mortality, while the four summer months give the fewest cases, and the smallest ratio of fatality.

Sex.—Of the 50 Glasgow traumatic cases, 41 were males, and 9 females; the proportion being 4½ males to 1 female, fully.

The table of published cases contains 144 males, and 27 females; the proportion being 5⅓ to 1.

By Mr. Curling's table, the proportion of males to females is 8 to 1. The Glasgow tables give a proportion of nearly one-half of this, and for the reasons already stated, I have no doubt, is the more correct.

Ages.—Of 47 Glasgow cases, in which the age is stated, 3 occurred betwixt 6 and 10 years of age, 13 between 10 and 20, 17 between 20 and 30, 5 between 30 and 40, and 9 between 40 and 50. The youngest was 6½, and the oldest 50. Of the 47 cases, 30, or about 64 per cent. occurred between 10 and 30.

Of the recoveries, 5 took place between 19 and 30, and 1 was 45.

Of 153 published cases, of which the age is stated, 12 occurred between 1 and 10, 43 between 10 and 20, 49 between 20 and 30, 21 between 30 and 40, 21 between 40 and 50, 5 between 50 and 60, and 2 between 60 and 70. Of the 153 cases, 92, or about 60 per cent. occurred between 10 and 30.

The youngest was 22 months, and the eldest 70 years.

While the above shows that tetanus may occur at any period between infancy and old age, it confirms the opinion, that it is a disease of youth and early adult life—upwards of 60 per cent. occurring in the important decades, between 10 and 30.

Ratio of Mortality.—Of the 50 traumatic Glasgow cases, 44 died and 6 recovered, giving a ratio of 7⅓ deaths to 1 recovery. Of the 41 males, 37 died and 4 recovered, being 9¼ deaths to 1 recovery. Of the females, 7 died and 2 recovered, giving 3½ deaths to 1 recovery. This table confirms the popular belief, that tetanus is less frequent and less fatal in females than males.

Of the 171 published cases, 80 died and 91 recovered—144 were males, among whom the deaths and recoveries were all but equal (71 and 73)—27 were females, of whom two-thirds lived (9 died and 18 recovered). On this point, this, and all similar tables are most fallacious. As already remarked, the majority of these cases have been recorded because the patients lived, and the result is, that the recoveries exceed the deaths. In the Glasgow cases all that could be found are recorded, and the result is, 7⅓ deaths to 1 recovery. This I am certain is not beyond the truth; for while I have excluded all cases of chronic trismus, except case 40, I have included all the subacute cases of general tetanus. If I were to confine myself to the intensely acute forms of the disease, our table would prove it to be all but absolutely mortal. But such a method of calculation would be obviously unfair and fallacious. By statistics drawn up in this way, the ratio of mortality of all our severe acute diseases, as typhus, small-pox, and pneumonia, would be greatly exaggerated. Of these diseases, the great majority of the intensely acute cases perish, while comparatively few of the subacute are lost; and were we to exclude the latter from our calculations the ratio of mortality would be very high. In tetanus, as in them, the correct method is to include all well-marked subacute and acute cases. Unhappily in tetanus the majority are "intensely acute," and I fear all such perish.

An interesting question has frequently been asked, what *proportion does tetanus bear to surgical lesions*, especially recent injuries and operations? In order to answer this question, I have selected the year 1847, in which we obtained the fullest records of the cases which occurred in the hospital. These were 5 in number, of which 4 occurred after admission. From the report of that year, I find that, including operations, wounds, compound fractures, burns, &c. there occurred in the hospital 347 * acute causes of tetanus, and 182† abscesses, ulcers, and other chronic causes of that disease. If we take 4 cases occurring within the hospital in one year, as a full average, which it certainly is, then 1 case of tetanus will occur in every 132½ cases of general surgical lesions. If we limit ourselves to the acute causes, the proportion will be 1 in $86\frac{3}{4}$. Two of the cases were caused by burns, of which there were admitted 82, giving the high proportion of 1 in 41. Two followed lacerated wounds and compound fractures, of which there were admitted 124, giving the proportion of 1 in 62.

---

* Operations less cases under other heads, 105. Wounds, including scalp, 70. Fractured skull, 4. Bites, 2. Burns, 82. Compound comminuted fracture, 50. Cut throat, 4. Gangrene, 15. Injuries and fistula of urethra and pudendum, 6. Onychia, 4. Periostitis, 5.

† Abscess, 30. Bed sores, 5. Open cancer, 10. Caries and necrosis, 20. Carbuncle 3. Fistula not cut, 4. Ulcers, 110.

Although these are merely approximations, yet, from what I have seen of the cases of tetanus in the hospital, and from the careful investigation which I have made, I believe I am not far from the truth when I say, that one case of tetanus occurs in 150 cases of general surgical disease, accompanied with lesion of the surface, and one in 100 recent injuries and operations.

Duration of the Disease.—Of 41 fatal Glasgow cases, 18 died within 2 days, 7 in three days, 5 in 4 days, 2 in 5 days, 1 in 6 days, 3 in 7 days, 1 in 8 days, 3 in 9 days, and 1 in 10 days.

The shortest period was in case 47, which proved fatal in 12 hours, after amputation of the thigh.

Of the recoveries, the disease continued from 25 days the shortest, to 46 the longest, period.

It would thus appear, that of 41 fatal cases, 18 died before the 3d, and 32 before the 6th day; and that if a patient survive beyond that period, his chances of recovery are considerable.

Period after Injury at which Symptoms of Tetanus Occurred.—Of 48 Glasgow cases, in which the time is stated, 1 occurred 14 hours after amputation, 2 in 2 days, 1 in 4 days, 2 in 5 days, 4 in 6 days, 4 in 7 days, 13 in 8 days, 3 in 9 days, 2 in 10 days, 4 in 11 days, 5 in 12 days, 1 in 13 days, 3 in 15 days, 2 in 16 days, and 1 in 17 days. Of the cures, 1 was seized 2 days after the injury, the other 5 from the 10th to the 16th, 1 on each day except the 15th.

Thus, previous to the 10th day there were 30, and from the 10th to the 17th there were 18 cases; showing that the large proportion of cases of tetanus (amounting to nearly 63 per cent.) occurred before the 10th day, and that these, with one doubtful exception, were fatal.* Of the 18 occurring after the 10th day, 5, or about 28 per cent. recovered; thus confirming the pretty generally received opinion, that the earlier after the occurrence of the accident the symptoms of tetanus set in, the more certainly fatal is the disease likely to prove. Indeed, if we exclude, as we ought, case 40, the Glasgow table stand thus:—29 cases occurring previous to 10th day of the injury, all fatal; of 18 subsequent to 10th day, 5 recovered.

Situation of Injury.—Of the 50 Glasgow cases, 8 were on the head, 7 on the trunk, 11 hands and fingers, 10 feet and toes, 2 arms, and 12 legs and thighs. The number of head injuries, followed by tetanus, is larger than is generally supposed; all were fatal. The hands and fingers, feet and toes, 21, confirm the opinion, that injuries of these parts rank among the most common causes of this disease. Of 169 published cases, 15 were on the head, 10 trunk, 43 hands and fingers, 47 feet and toes, 14 arms, 40 legs and thighs.

---

* Case 40—one of trismus, from extraction of two teeth, found a place in the table by mistake.

The nature of the injury is shown by the following classified table:—

	Glasgow Cases.	Published Cases.
Severe injuries, bruises, compound fractures, &c.,	17	70
Prick by nail, &c., generally on foot,	6	31
Wounds and slight lacerations of fingers and toes,	10	17
Slight injuries,	3	23
Amputations,	2	8
Burns,	6	4
Removal of Mamma,	1	0
Cupping on temples,	0	1
Flogging,	0	1
Laceration of cornea,	0	1
Blow on back, &c.,	0	5
Simple fracture of thigh,	0	1
Fall on nose,	0	1
Abortion,	0	1
Retained placenta,	0	1
Ligature of piles,	0	1
Fistula ani,	1	0
Extraction of tooth,	1	1
Frost bite,	0	1
Spontaneous gangrene of feet and legs,	1	0
Scirrhus testis,	0	1
Carious bone,	1	0
Ulcers,	1	2
	50	171

From the above table, several interesting inferences may be drawn. (a) It shows, that while tetanus may follow almost any form of surgical lesion, it is comparatively common after recent injury, and rare in connection with the more chronic forms of disease. Of the latter, the Glasgow cases give us four examples, one each of fistula ani, spontaneous gangrene, carious tibia, and ulcer of the leg. But even of these, one only (caries of the tibia, which recovered,) can be set down as chronic. The fistula was complicated with acute rheumatism, the gangrene was acute, demanding amputation of the leg, and the ulcer was inflamed and sloughing. (b) The more severe forms of injuries, consisting of compound fractures, and violent injuries of the hands and feet, supply the largest individual per centage, 17 out of 50, or 34 per cent. Next come wounds, and the slighter injuries of the fingers and toes. Pricks by nails, generally on the sole of the foot, give 6 in the Glasgow, and 31 in the "published" cases. Burns have been a fruitful and fatal source of the disease in our hospital, perhaps from their frequency and severity. In 1847, 1 in 41 of the burns died of tetanus. (c) I have collected 5 cases, in which blows and sprains, without external lesion, seemed to induce the disease—of these 2 died, 3 recovered. (d) It had always appeared to me a peculiarity in tetanus, that while it would at times appear to be intimately connected with inclusion of a nerve in a ligature, it never followed deligation of nœvi, tumours, piles, or any disease in which this form of removal is employed. Of the numerous cases in which I have used the ligature in this way, and seen it applied by others, I have never met with one in which tetanus supervened. I began to think, that they were never conjoined, and must confess I felt some disappointment when I fell in with one in which tetanus followed ligature of piles. It stands case 159 in the table, and is taken from *Dublin Medical Rep.* vol. xxvii. p. 45. It proved fatal in 24 hours.

(e) Tetanus is happily rare in obstetrical practice. The tables contain only two examples—one (122) from abortion, recorded in the *Monthly Journal of Medical Science*, 1850, p. 387, which proved fatal in three days; and one (164) from retained placenta, recorded in the *American Journal*, which terminated fatally on the first day. Others from abortion are recorded, but not with sufficient details to enable me to insert them in the table. Dr. Simpson, (*loc. citat*) says, that he met with a fatal case from the spontaneous detachment, by the uterus, of a "large soft cellular polypus."

For the following case of tetanus after abortion, I am indebted to my friend Dr. Fleming.

The patient was for the first few days of her illness under the care of Dr. James Adams, who being obliged to go from home, she was attended by Mr. Crossen, and occasionally seen by Dr. Fleming in consultation. The case is abridged from the notes of Mr. Crossen and Dr. Fleming.

Mrs. M'Lean, aged 36, a healthy woman, and the mother of five children.

16*th June*, 1852.—Seven days ago, being about three months pregnant, she miscarried without any assignable cause, which was accompanied and followed by obstinate but not very copious hæmorrhage. The discharge ceased to-day rather suddenly, and soon afterwards symptoms of trismus supervened, and next day (the 17th,) was very complete, affecting the muscles of neck, jaws, and face, the head during the paroxysm being bent forcibly backwards: at this time the muscles of the back were not affected. Eyes sunk and expression anxious, pulse 80, small, but regular when free from paroxysm, deglutition difficult, bowels constipated, abdomen full and tympanitic, no discharge from vagina. The tetanic symptoms steadily increased, the muscles of the back becoming severely implicated, opisthotonos at times complete. The paroxysms which at first recurred every 30 or 40 minutes soon increased in frequency and severity, and she died on the forenoon of the 19th.

It is needless to encumber the case with the details of treatment, which consisted at first of purgatives and turpentine enemata;

followed by large and frequent doses of opium, free inhalation of chloroform, and friction over the neck and spine with chloroform. Latterly beef-tea injections and brandy were administered. The vagina was frequently washed out by injecting tepid water.

Permission was with difficulty obtained to examine the uterus but no other organ. This was done about 30 hours after death; the weather in the interval was damp and warm, but not sultry.

The uterus was about two and a-half inches in length, and of corresponding breadth; it was quite empty and more flaccid than natural. When cut into, the muscular substance and lining membrane, particularly the latter, were very empty, so that the whole organ floated in a basin of water. There was no decomposition apparent.

(f) Of tetanus following amputation the Glasgow table gives two examples. Both operations were demanded on account of acute gangrene, and were both performed by me. I recollect a third case, the record of which has been lost, in which amputation was performed by one of my colleagues, for acute gangrene of the leg—the result was fatal. There have, doubtless, been others, but taking the cases as they stand, they give amputation as the cause of 4 per cent. of the cases of tetanus. The "published cases" give a close approximation, nearly 4½ per cent. One case followed extirpation of the mamma.

(g) Among the published cases there are 5 from blows without wound. Some of these are considered by their recorders as examples of idiopathic tetanus, but I think erroneously. There is ample proof that other lesions, besides those of the surface, induce the tetanic spasm, and the "subcutaneous," may, I think, be correctly ranked among the number. The tables only give one case from simple fracture. It appears to have been comminuted, and a portion of bone to have penetrated the vastus internus. The Glasgow table affords no example of tetanus following a subcutaneous injury or simple fracture, and so far as my memory serves me, none have occurred during my connection with the hospital; while, therefore, we admit the cause, we have ample proof of its rarity.

State of the Wound at the time of the Occurrence of Tetanus.—Of 5 Glasgow cases, which recovered, the wound was "healing," "without discharge," and granulating in 3; sloughing and unhealthy in 2. Of 32 fatal cases, the wound was said to be "nearly healed and doing well" in 12; "inflamed or suppurating" in 6; "gangrenous and sloughing" in 14; and in 1, at least, it must have been quite recent. In 15, therefore, it was healthy, 22 inflamed or sloughing, and 1 quite recent. Of 96 published cases, in which the state of the wound is mentioned, the following short table shows its condition:—

	Fatal.	Cured.	Total.
Healed or said to be healed, ...	4	7	11
Healing, ...	21	20	41
Inflamed or Suppurating, ...	8	14	22
Unhealthy, sloughing, gangrenous, ...	12	10	22
	45	51	96

To these must be added, 5 cases in which the wound must have been recent, the symptoms having set in from the 5th hour to the 2d day after its infliction.

That a wound so recent as not to come under any of the four heads in the above table, can cause tetanus, can hardly, I think, be denied. No doubt, in the case of amputation, we have in many instances a previous injury, which may have been the cause of the tetanus, independently of the operation. But, admitting this, we have, I think, a sufficient number of authentic cases to prove, that a recent wound can induce tetanus. In case 155, the symptoms set in in 4 hours, and in 161, on the 2d day after "a cut finger."

The two tables, taken together, show, that the inflamed and suppurating state is not the most common antecedent, and that it is less so than the unhealthy, sloughing, and gangrenous. The number of cases in which this last state of wound is recorded as present, or having existed, is very considerable.

Next, perhaps, in point of interest to the "green wound" comes the perfectly "healthy, healing, or healed." If we take the two tables together, this state rather exceeds the preceding, precluding, I think, the possibility of doubting that tetanus very frequently occurs when the wound is perfectly healthy.

Does it occur when the wound is quite cicatrized? Of this our Glasgow cases afford no unequivocal example. The nearest approach to it, perhaps, is case 13, in which the sole of the foot was pricked by a nail on the 16th July—tetanus set in on the 26th, and it is stated, that the wound "had not suppurated." But this is by far too equivocal to enable us to say that the prick had quite healed in 10 days. In every other case, the wound was more or less open, and in my own experience, I have never seen tetanus supervene upon a "healed" wound.

Of the published cases, 11 are said to be "healed," and this, added to the high authority of Larry, Dupuytren, Travers, Curling, and I believe many others, would appear amply sufficient to establish the fact. Still, I confess, it is one regarding which I entertain considerable doubt. The length to which this communication has already extended, forbids my entering on a detailed investigation of this point. So far, however, as I have carried it, the following quotation from Mr. Travers conveys the conclusion at which I have arrived, "not unfrequently the punctured wound, as from a nail, wears the aspect of being healed, and is almost forgotten, when the spasms set in." I suspect they "wear the aspect," but are not healed.

Prognosis.—The Glasgow cases confirm the opinion, now pretty generally entertained, that acute tetanus is a mortal disease. Of the subacute cases 5 recovered, but it is impossible to say what ratio these bear to the subacute which died, as a fatal issue must, to a certain extent, be looked upon as a proof that the case was acute. In my own experience, I have only witnessed one recovery,—it was that of a girl, admitted for laceration of the back of the hand by a carding machine. The record has unfortunately been lost, but throughout the symptoms were subacute.

The circumstances and symptoms which portend a fatal issue, are, the sex—male; age—youth and early adult; the occurrence of the symptoms within ten days from an accident or operation; the pulse quick early in the disease, or rapidly becoming quick from the second to the fourth day; the rapid extension of the spasms from one set of muscles to another; early implication of the muscles of respiration, and especially of the muscles of deglutition. The two last circumstances I consider of great importance. I should have no hope of a patient, who, from the second to the fourth day, was threatened with suffocation, when he attempted to swallow. (*To be continued.*)

XII. *On the Stable-Nuisance in Glasgow,*—being a Paper read before the Medico-Chirurgical Society of Glasgow, July 12th, 1853, and now Published at the request of the Society, and with a Resolution directed by them to be forwarded to the Commissioners of Police. By Professor A. Buchanan, M.D., President of the Medico-Chirurgical Society of Glasgow.

The sanitary condition of our large towns, as it is one of the principal elements on which the health of the whole community depends, has of late years attracted much attention both from Government and from the public at large; and the sanitary state of our own city has been the subject of careful consideration on the part of our Magistrates and Commissioners of Police, and has certainly been much ameliorated by many judicious regulations. I say this, respectfully, at the outset, that I may not be supposed to impute blame to our municipal rulers, or any want of care on their part for the common weal, when I take the liberty of pointing out a great and widely-spread evil, which is not only permitted, but enforced, or at least rendered unavoidable by the police regulations of this city.

What I have named the Stable-Nuisance, would perhaps have been more correctly named the dung-hill and dung-pit nuisance; but this title would have involved me in a subject too extensive, as I mean to confine my observations chiefly to the west, or as it is considered, the cleanly end of the town, where the nuisance in question exists almost solely in connexion with stables. It consists in this. A large pit, varying in size from ten to eighteen feet in length, by from ten to twelve in breadth, and from six to ten in depth, is excavated under or adjoining to every stable in the west end of this city, and a similar construction is adopted in many of the stables in the east end, although most of these, I believe, are formed on the old plan with open dunghills. In these subterranean caverns, horse-dung and urine, stable litter, ashes, household refuse of every kind, and other impurities not to be named, are allowed to accumulate for periods varying from about a quarter of a year to twelve months or more, during which they pass through every stage of decomposition, and exhale through various apertures into the neighbouring atmosphere, fetid gases and effluvia of every kind, which a putrid mass of animal and vegetable matter is capable of engendering.

It is true that the putrifying matters are concealed, so that nothing offensive meets the eye; but this only renders the exhalations the more dangerous. The sense of smell often gives warning of them; but even when no such warning is given, the danger is not the less imminent, since it is well known that many of the subtle poisons that contaminate the atmosphere, and diffuse disease and death among those who inhale them, are quite inappreciable by the senses. Filth is indeed never so dangerous, as in that insidious form in which it does not meet the eye. It is under this point of view, that the old and dirty part of the city of Glasgow contrasts in point of salubrity, in no unfavourable way, with the apparently cleanly new town; since even in the filthiest parts of the former, although impurities of all kinds abound, as they ever must abound where so many thousands of human beings are congregated together, yet these impurities are seldom suffered to accumulate for months together, as they can never long escape the vigilance of the police, and then they are at once removed: while in the new town, although the streets are spacious and clean, and the number of inhabitants relatively small, yet there is excavated behind every house, a plentiful and never-failing spring of malarious poison; for the dung-pits being private property, neither police-officer nor scavenger is permitted to interfere with the impurities they contain, which are thus left to accumulate till the pits can hold no more.

So bad does this system appear to me to be, that I have no hesitation in saying, that I think it worse than the filthy old system of a dunghill before each door, which has been so often described as the opprobrium of our Scotch villages in former times. I believe that old system to be only in appearance less cleanly, and to be actually less pernicious, than the system now adopted in the modern city of Glasgow. For there is reason to believe, that when a mass of organic matter is undergoing decomposition, if it be open to the winds of heaven, and the influence of sun and rain, while the water runs off freely from its surface, it will generate exhalations less noxious, and at all events less concentrated, than when the decomposition goes on in damp, unventilated, subterraneous caverns.

An important peculiarity of these subterraneous caverns, considered as causes of insalubrity, consists in this—that from their construction they cannot be completely emptied, so as to admit of their being cleansed and ventilated. When they are full, their more solid contents are carted away, but there remains behind a large quantity of liquid and semi-liquid matter, which the grape and the pitchfork have no power to remove, and which cannot flow away, as it is some six feet under the level of the surface. In most of the mews lanes, there are no drains, or if there be, they are above the level of the pits, and have no connexion with them. It would indeed be contrary to all the maxims of agricultural economy, and frustrate the very end for which all this hoarding of filth takes place, to allow the most valuable part of it to be lost. But whether from this motive, or from the difficulties inseparable from the construction of the pits, no attempt at thoroughly emptying and cleansing them is ever made. I indeed know of only one instance in which any dung-pit in Glasgow was ever completely emptied. Some twelve years ago, a new tenant coming to a house in Moore Place, resolved to have a very capacious dung-pit attached to the house completely cleansed. After the more solid matter had been removed in the usual way, there remained behind such a quantity of liquid, that it was necessary to use buckets for baling it out. The liquid was poured out into the lane, in which there was at that time no drain, and made its way along the surface to the nearest opening in the drain in St. Vincent Street. The smell was so powerful as to infect the whole neighbourhood for many hours after. I recollect of being highly impressed upon this occasion with the utility of the olfactory nerves in warning us of the presence of malaria; for no man approached the infected spot without involuntarily holding his mouth and nose, and quickening his pace, or even fairly taking to his heels till he had got beyond the sphere of contamination. Now, there is a liquid equally offensive, in every dung-pit in the city; and it would be well if the public had always the same salutary warning to teach them to avoid it.

It is mainly to this putrid liquid, and to the circumstance that it cannot be removed, that I ascribe the most hurtful effects of the dung-pit system. The liquid left behind when the pit is emptied out, acts as a ferment inducing immediate putrefaction in all substances susceptible of decomposition that are thrown into it. The exhalation which it gives off is acrid and penetrating. It enters the stable, and is injurious to the horses. It enters the coach-house, notwithstanding every precaution to keep it out; and it adheres with peculiar obstinacy to the woollen and hair of the lining, cushions, and rugs of the carriage. I have often heard physicians complain of the smell which their carriages have when they are first taken out in the morning. It is peculiarly rank and offensive, and of that urinous character which it would have if twenty cats had been imprisoned in the carriage all night. Ventilation lessens it, but cannot altogether drive it away; so that it continues to annoy the occupant of the carriage till his organs become at length insensible to it. This seems to me to go a certain length in explaining an observation not unfrequently made in Glasgow—that a physician's face becomes paler every day, after he leaves off walking on his feet and takes to driving in a carriage.

When we reflect on the effects which these arrangements are likely to produce upon the health of the inhabitants of Glasgow, we have a probable enough explanation suggested to us of many facts connected with the prevalence of disease, which, without the considerations stated above, would appear anomalous. For instance, it is a well-known fact, that malignant cholera was much more frequent and fatal, relatively to the number of inhabitants, in some of the wide and apparently well-aired streets of the new town, than in many of the filthiest parts of the old. What fearful havoc would not have ensued, had the upper end of St. Vincent Street been as densely peopled as the Saltmarket or the Wynds? But it has been abundantly demonstrated by observations made both in this country and abroad, that cholera affects filthy localities and foul air; and we certainly can see no reason why the disease should not spread amid the fumes arising from our western dung-pits, just as much as in the mire and surface filth of the eastern part of the town. To take one other illustration. All physicians are aware of the occurrence of certain forms of continued fever in a sporadic form, in the modern part of the city. We meet with it frequently without our being able to trace any communication with the over-crowded districts in the other end of the town, which are the usual haunts of typhus. We meet with it at all seasons, but it would probably be most rife during the summer and autumnal months, did not the wealthier inhabitants at that time desert the city with its dung-pits, for the sea-coast with its healthful breezes. The conclusion usually, and, I believe, correctly drawn, is, that gastric fever may be considered as endemic in the new part of the town; and it seems to me to have gone on increasing in a proportion more than direct, as the city has increased in wealth, and spread her spacious streets over a greater extent of ground. This seems anomalous, and the causes of it are perhaps complicated; but certainly a great part of the anomaly vanishes, when we consider that an increase in the wealth and extent of the modern city, is just another expression for an increase in the number of dung-pits, and other permanent repositories for filth, which the present state of our police regulations renders unavoidable.

It is needless, however, in the present state of medical knowledge, to enter into any further argument to prove that malaria is a cause of disease, and that it is engendered by vegetable and animal substances undergoing decomposition. If the permanent repositories for filth existing in Glasgow are not hot-beds of disease, there is no truth in the received doctrines of medicine. We owe it indeed entirely to the coldness and other qualities of our climate, which render it less apt to generate the malarious poison than a sultrier atmosphere, that the insalubrity arising from this cause has not been much greater. Placed a few degrees farther to the south, the modern city of Glasgow would have been rendered uninhabitable by its dung-pits.

But what, it will be asked, is the use of pointing out evils which are inevitable, seeing that we cannot do without stables; and that, according to the immemorial usage of the citizens of Glasgow, there can be no stable without either an open dunghill, or a covered dung-pit? The answer is, that we can retain our stables without adopting either of the alternatives just mentioned, and that by abandoning both we would effect a most important sanitary reformation. If we would adopt a better system, we need not look far for a model. We have only to imitate our neighbours in Edinburgh, in whose beautiful city, while there are, I believe, more stables in proportion to the number of inhabitants, there are fewer dunghills, and not one such pestiferous cavern as those which in endless ranges threaten the health and lives of our own citizens. The police regulations of Edinburgh are admirably devised, in so far as they relate to the impurities daily reproduced in every large city. It is well known that the impurities with which the police have to do, are at first quite innoxious, and that they only acquire their deleterious qualities by being kept. Hence the propriety of immediately removing all such substances, before their pernicious qualities are developed. This is the sound hygienical principle on which is founded the system adopted in Edinburgh, and in many other large towns. All domestic refuse must be placed in front of each house at a certain hour in the dusk of the evening, when it is carried away by the police. The very same system is pursued in the mews lanes. The refuse of the stables, instead of being allowed to macerate for months in subterraneous caverns, is placed in a heap at the stable door till removed. It is true that the quantity allowed to accumulate—at least a cartful—is greater than hygienical science can sanction; since although the fumes of the stable are generally innoxious, yet it is possible, that in seasons of epidemic sickness, the atmosphere of a town loaded with such fumes, might become a source of disease. This relaxation of strict sanitary rules is probably permitted on account of the value of stable manure in Edinburgh. But in this city no such motive exists, as the immense quantity of manure which the neighbouring farmers have at command, renders the price of it very low; and the time is probably not far distant, when the farmers will demand payment for carrying off stable manure, as they now generally do with respect to ashes. Few proprietors of stables would therefore object to the daily removal of it by the police; and at all events, the remission of the local tax on horses, as an equivalent, would at once obviate every difficulty. Still further, what is of little value to any individual, might, if collected on a great scale, become of immense value to the city; for, by taking advantage of the improved facilities of transport, it might be conveyed to repositories in the surrounding districts of country, where it would recover the value it has lost in the town, and thus at once serve to promote agriculture, and much more than repay the expense of collecting and distributing it.

It appears to me, therefore, to be highly desirable, that the Magistrates and Commissioners of Police should abolish hereafter, within the city of Glasgow, all dunghills, and still more, all subterraneous caverns for filth; and that, instead, they should adopt the simple plan of clearing the streets, morning and evening, of all domestic refuse, and the mews lanes every morning of the refuse of the stables. By so doing, they would promote the salubrity and amenity of the city, improve the cultivation of the adjacent country, and secure to themselves an important revenue.

My attention has been drawn to this subject by my being about to engage in building a stable, and finding that the first step required was to form such a subterraneous cavern as I have described above. I could not do so without shutting my eyes to the clearest lights of medical science, nor without incurring the most deserved blame by knowingly constructing a hotbed of disease, as well as a nuisance to my whole neighbourhood. I have therefore thought it right to bring this matter before the Medico-Chirurgical Society of Glasgow, and request of them, after considering it carefully, to give a public expression of their opinion respecting it. In doing this, while I feel confident that the Society will not deem it foreign to their business to deliberate on a question involving the health and lives of their fellow-citizens, and that they will not shrink from the duty of publicly declaring the conclusions to which their deliberations may lead, I also feel confident, judging from past experience, that the public of Glasgow will receive with the deference to which it is entitled, any opinion on a medical subject to which the Society may give its sanction. Two years ago, acting as the organ of this Society, and wielding their name and authority, I was enabled to smite the hydra—Mesmerism; and now, trusting to the same powerful aid, I cherish the hope of accomplishing the no less arduous labour of sweeping out the Augean stables of the city of Glasgow.

After deliberating on the subject of this paper, on the 12th of

July, when it was laid before them, and adjourning their discussion till their next meeting on the 9th of August, the Medico-Chirurgical Society of Glasgow, on the motion of Dr. James Adams, seconded by Dr. Morton, adopted the following Resolution:—"That the Society are of opinion, that the practice at present adopted in this city of having permanent repositories for filth, such as dunghills and subterraneous caverns, is not only disgusting and offensive, but injurious to the health of the inhabitants; and that the practice adopted in many other cities—that of removing every evening and morning, the impurities which have accumulated during the preceding twenty-hours—appears to the Society to be much superior; and the Society direct their President respectfully to communicate these views to the Commissioners of Police, for the benefit of their fellow-citizens."

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

I. *On the Use of an Artificial Membrana Tympani, in Cases of Deafness dependent on Perforation or Destruction of the Natural Organ.* By JOSEPH TOYNBEE, F.R.S. Churchill, 1853.

DEAFNESS, if great or long continued, is a defect so annoying and injurious to the interests of the patient, that its removal is always desired with the utmost solicitude. Were the majority of severe or protracted cases under the certain domain of curative treatment, this anxiety could be honestly set at comparative ease, by the assurance of a very probable cure; but as the opposite is the fact, an exaggerated is generally more pleasing than an honest prediction. It thus happens that the treatment of such cases is almost wholly trusted to a class of practitioners called *aurists*, who often restrict themselves to this kind of practice. Some of these are honest and scientific, but certainly a considerable number of them might be denominated empirics of greater or less magnitude. Accordingly, we have secret remedies, mystical drops, a variety of specifics and other means and operations, vaunted as capable of curing this affection, but which have in reality little or no beneficial effect on the disease. The public, therefore, prefer this division of practitioners in all but simple cases, as it is imagined that they alone can dive into the labyrinth of obscurity, and satisfactorily resolve the nature of the affection. It is true, that a man who devotes his whole time to the study of one particular organ, other things being equal or nearly so, may excel the man who, in addition, devotes his attention to the treatment of the whole diseases of the body; but it is equally true, that if the first be totally ignorant of medical science, or a mere novice in medical education, confidence in such a man is both unsafe and uncertain.

Several little adventitious circumstances tend to favour the skill and reputation of the regular aurist; such as his minute examinations, his acoustic trials of the nature and extent of the deafness, his examination of the meatus with the speculum and the Eustachian tubes with the catheter, with his display of syringes and phoniferous instruments; and such tend to confirm the public in the accuracy of their belief. The regular practitioner is perhaps too inattentive to some of these particulars, which are of use in diagnosis or cure; and hence one of the reasons why the practice has in a great measure slipped out of his fingers. If the diseases of the head and chest—cavities which contain organs of as great, if not greater, variety and complication than those of the ear—be trusted to his care, why should not those of the latter also? assuredly the study and treatment of cerebral and pectoral affections, are of far more difficult attainment than those of the organs of hearing. Wounds and all other diseases of the external ear are not more difficult to manage than those of other parts of the body; and no well informed surgeon can be at a loss to devise or recommend means for concentrating sound when this organ is flat, deficient, or lost by an accident; such as an artificial ear, the ear trumpet, or a simple contrivance of metal or other material to support and bring forward its edges, as the case may require. Congenital imperfections of the meatus are treated on the ordinary principles of surgery. Thus, if the opening be closed by a membrane, or if the obstruction be still deeper seated, an operation similar to what is performed on the rectum and vagina is had recourse to. If the tube be too small, dilatation by bougies must be adopted; and if foreign bodies get a lodgment there, they must be extracted by a pair of forceps or other instrument. The eyed end of a silver probe, a little bent, has often sufficed for the extraction of peas and other similar bodies, by a gentle insinuation behind them. The removal of hardened cerumen is by no means a difficult operation, although a little perseverance is sometimes required. Inflammatory affections of the auditory passage, with suppuration and subsequent discharge, ought to be treated according to the ordinary rules; and excrescences may be removed, as in other situations, by the ligature or caustic; caution being necessary in the employment of the latter, in case of injuring the membrana tympani. In affections of this kind the nitrate of silver in various proportions is often very advantageous. Diseases of the labyrinth, or what is often called nervous deafness, are the most intractable of all forms of auditory affections; and it is in such that quackery often plays its game with most success; simply because they are little under the power of remedial treatment, but are influenced, to a considerable extent, by the general health, or by hitherto unexplained and capricious circumstances, so as occasionally to exhibit remarkable improvements. Hygienic measures are sometimes of considerable value in such cases, but local and general medical treatment, of a safe and moderate description, should also be employed.

Diseases of the tympanum are sometimes accompanied with sloughing or openings in the membrana tympani, which although not frequently productive of absolute deafness, yet always diminish the hearing to a very considerable extent. This result may be ascertained by examining the ear under a bright light, and sometimes by the patient's ability to blow air through the external ear, if the Eustachian tube be not obstructed. This membrane, when destroyed, does not appear to be capable of regeneration.

Mr. Toynbee, whose brochure is placed at the head of this article, has the merit of inventing an artificial substitute for this membrane when lost. He divides his subject as follows:—1. On the structure of the healthy membrana tympani. 2. On the functions of the membrana tympani, tympanum and Eustachian tube. 3. On the formation and use of an artificial membrana tympani. According to him, the membrana tympani is composed of five laminæ, the epidermis, or first, forming a *cul-de-sac* at the inner extremity of the external meatus. Sometimes this delicate layer is all that is left of the membrane, and caution is recommended in the use of the syringe, as its application may cause a rupture. The author is of opinion that the Eustachian tube does not always remain open, and that the guttural orifice is always closed, except during the momentary action of swallowing. He says:—

> "In this latter case, the muscles of the Eustachian tube, the tensor and levator palati muscles, open the guttural orifice of the tube, afford free egress to the mucus secreted by the lining membrane of the tympanum, and allow air to enter or leave the tympanic cavity. The closure of the tube, excepting during the act of deglutition, can be experimentally proved. To those accustomed to descend in a diving-bell, it is well known that the unpleasant sensation in the ears, amounting sometimes to positive pain, is capable of instant removal by the act of swallowing, during which the condensed air being allowed to enter the tympanum and come in contact with the inside of the membrana tympani, the pressure on its outer surface is relieved by being counterbalanced. Again, if an attempt is made to swallow while the nostrils are closed by the finger and thumb, a sensation of fullness and pressure is experienced in the tympanic cavity, in consequence of air having been forced, during the act of deglutition, through the open tube into the tympanum; and this sensation continues until, by another act of swallowing, the tube is reopened and the confined air escapes into the fauces.

He next proceeds to show that the sonorous vibrations, communicated to the bones of the head, appear much louder when the meatus is closed than when its orifice is open, and he relates some simple experiments in proof of this.

> "If, for instance, a tuning-fork be made to vibrate, and it be then placed in contact with the head, the sound proceeding from it will, in a few seconds, cease to be heard; but if, directly on this cessation of sound, the experimenter close the entrance of the meatus in one ear, so as to convert it into a shut cavity, he will immediately hear a

renewal of the sound of the tuning-fork; from which it appears most probable that the sonorous vibrations communicated to the external meatus impressed the membrana tympani much more powerfully when confined to the cavity of the meatus, that when allowed free communication with the external air. Considering the result of this experiment in connexion with the preceding fact of the ordinarily closed state of the tympanic cavity, it appeared to me highly probable that the sonorous vibrations imparted to the cavity of the tympanum, could only make their due impression on the membranes of the labyrinth, when strictly confined to the tympanic cavity and were not allowed to expend themselves in the cavity of the fauces. This conclusion was strengthened by the recollection that all the walls of the tympanic cavity appear constructed for producing resonance, having an investing mucous membrane of such tenuity as scarcely to be detected, save by the touch, or by the use of a magnifying glass, and also by observing that this peculiar condition of the mucous membrane was restricted to the tympanic cavity itself, and to that portion of the Eustachian tube which forms a portion of the resonant walls of the tympanic cavity.

"If the view here advocated be correct, and if, for the perfect performance of the function of hearing, it be necessary that the sonorous vibrations should be confined to the tympanic cavity, it is clear that the analogy usually cited as existing between the musical instrument, the kettle-drum, and the tympanum of the human ear, to the effect that in both, the air within should be allowed to communicate with that without, is incorrect; and it is also evident that an opening in the membrana tympani must, in a degree, diminish the power of hearing. Upon the examination of patients affected with a simple perforation of the membrana tympani, this diminution in the ability to hear can, in fact, always be detected; although, as has been stated, if the orifice be small and the organ otherwise healthy, the difference is inconsiderable. In the greater number of cases, however, where perforation of the membrana tympani has existed, other lesions of a serious character have accompanied it—as thickening of the mucous membrane of the tympanum; pressure on the membrane of the fenestra rotunda; derangement of the articulation of the stapes with the fenestra ovalis; or injury to the nervous expansion in the labyrinth. Under any of these circumstances, it occurred to me that as an orifice in the membrana tympani, by preventing the sonorous undulations from being concentrated upon the membranous labyrinth, owing to their diffusion in the meatus, might be the direct cause of the diminished power of hearing, so it was probable that increased power would be the result of an artificial stoppage of the orifice."

As a practical deduction from these experiments and reflections, Mr. Toynbee was led to attempt the construction of an artificial membrana tympani. After making various trials with some success, he requested Messrs. Weiss to construct one, which is described as follows:—

"The centre should consist of two very fine plates of silver, having a diameter of about three quarters of a line, between which the layer of vulcanized india rubber or gutta percha might be placed, and to the outer surface of one of these plates a silver wire was to be attached. The artificial membrana tympani made by Messrs. Weiss from these directions, has hitherto been perfectly successful. As supplied by them, the portion of vulcanized india rubber or gutta percha is about three quarters of an inch in diameter, which leaves sufficient margin for the surgeon to cut out a membrane of any shape that may seem to him desirable, and to leave the silver plate, either in the centre or towards the circumference, at his discretion. The silver wire is of sufficient length to admit of the membrane being introduced or withdrawn by the patient, but it is not perceived externally except upon especial observation."

A second kind has also been constructed, which he thinks is often preferable to the other, if the meatus be sufficiently large to admit of its passage; but we must refer our readers to the pamphlet itself for information on this point.

The author next makes a few observations on the diseases which usually cause perforation or destruction of the natural membrane. According to him—

"The most frequent of these diseases is catarrhal inflammation of the mucous membrane lining the tympanic cavity. It is one of those usually called ottorhœa, of which a more particular account will be found in the paper cited in the margin. This disease generally follows an attack of scarlet fever, scarlatina, measles, or any ordinary cold, and it usually occurs in children having a tendency to enlargement of the glands. The tympanic mucous membrane becomes thickened, and secretes so large a quantity of mucus of so viscid a character, that it cannot escape through the Eustachian tube; consequently, it gradually distends the tympanic cavity and presses upon the inner surface of the membrana tympani, a portion of which, generally posterior to the malleus, begins to ulcerate, and an aperture is at length produced, through which the mucus exudes into the external meatus. This orifice is in some cases not larger than a small pin's head, in others it is a line in diameter, while in many cases the entire membrane is destroyed, with the exception of a margin at the circumference about half a line in diameter, which, being composed of the combined fibres of the thickest portion of the circular and radiate laminæ, generally remains. This margin is deepest at the upper part.

"The other disease through which an orifice in the membrana tympani is usually effected, is *ulceration of the fibrous laminæ.* The disease itself is commonly the result of inflammation of the dermoid layer, which spreads first to the radiate fibrous and thence to the circular lamina. The laminæ, being weakened by the ulcerative process, fall inwards as far as the promontory, to which they often ultimately adhere, and, when an orifice has thus been produced, its margins are not unfrequently drawn into the shape of a funnel, whose inner part adheres to the tympanic walls. In ulceration of the membrana tympani, proceeding from the dermoid layer, the entire organ is very rarely destroyed, but an orifice merely is produced.

"The cases in which the artificial membrana tympani is of the greatest benefit are those where there is a well defined aperture in the natural membrane, or, if it be entirely absent, where there is simple hypertrophy of the mucous membrane of the tympanum, with or without discharge from its surface. In these cases, it will be found that the organ has by no means entirely lost its power of discerning sounds; as a general rule, the human voice is heard when the mouth of the speaker is situated within about a foot of the patient's ear, and when the words are spoken slowly and distinctly. The diminished power of hearing just noticed, while it entirely excludes the sufferer from the advantages of general conversation, is, however, greatly aggravated when, to the affection of the membrana tympani and mucous membrane of the tympanum, the stapes has become anchylosed to the fenestra ovalis, or the nervous expansions have been injured. In such cases where the patients require to be shouted to close to the ear, the artificial membrane will not prove of any service."

Several interesting cases are added showing the value of his contrivance.

An appendix is also added on the excision of the tonsils in the treatment of deafness. Not unfrequently we find a slight degree of obtuseness in hearing accompany a catarrhal affection, in which the nose and throat are specially implicated; and in such cases the mucous excitement has probably extended a short way into the Eustachian tube, but there is no reason to believe that chronic affections of this tube are a very frequent cause of protracted deafness. No doubt, narrowing, or stricture of this canal, may occur as it does in the rectum, urethra, lachrymal ducts, or other mucous canal, even when no specific cause has originated the disease, and may require catheterism, or the more formidable apparatus of a superadded pump to effect dilatation; but active treatment in that quarter is certainly not so frequently required as some authors would lead us to believe. The Eustachian tube is no doubt necessary for the perfect performance of the function of hearing, and although Mr. Toynbee is of opinion that it is only open during the act of deglutition, it nevertheless appears almost a self-evident proposition that this tube has been placed in its situation for some important acoustic purposes; and what purpose can be more probable, than that the ingress and egress of air should be at all times possible?

But this view by no means warrants some of the very severe operations that have lately been practised with the object of removing mechanical obstructions to the performance of its functions. The excision of the tonsils has been extensively practised for this purpose, and the author has included in his pamphlet a short and conclusive paper on the subject; showing clearly that both in theory and practice it deserves condemnation. Such obstruction or pressure may no doubt occur in a few instances, particularly if the swelling be large or peculiarly situated, but certainly such cases are not common, and we could point at the present moment to two or three children with tonsils greatly enlarged for a year or two, whose hearing is perfect.

Mr. Toynbee's papers are well written and do him much credit, and we doubt not that his artificial membrana tympani will be found more or less useful in the cases appropriate for such treatment.

II. *Researches on the Conduct of the Human Uterus after Delivery.* By Dr. R. Heschl, First Assistant to the Chair of Pathological Anatomy in Vienna. (Translated from the German.) Dublin: Fannin & Co. 1853. Pp. 16. With a Plate.

Dr. Heschl commences his interesting paper with a brief description of the condition of the uterus immediately after parturition. The result of repeated trials he has made, shows that its weight varies from 1 lb. 6–7 oz., to 2 lb. 5–7 oz. in twin cases. "Its size," he says, "depends on the degree of contraction, so that in general it is from eight to ten inches long, of corresponding breadth, and has a wall an inch thick; its substance is pale red, almost white; that of the cervix flabby, from serous infiltration, slightly torn at the external orifice, and penetrated by small extravasations. Its veins, with the exception of those of the placenta spot, are bound together by the contraction of the muscular structure; are for the most part flat, either empty, or only filled with small flabby, unadhering clots; their coats are pale, thinner than those of the veins in the extremities of like calibre, in fact nearly in the same condition as other veins lying in parenchyma. The capillaries are few; the arteries and nerves, so far as I know, without any peculiar properties. The veins of the placenta spot are wide, probably from the same cause as in the last stage of pregnancy; their walls are thin; they are filled with dark-red or greyish-red clots sticking to their parietes, and gape into the cavity of the uterus, with their orifices plugged with these clots. The placenta spot, which always occupies a third part of the inner surface of the contracted uterus, still retains a projecting, uneven, and considerably lacerated surface. The rest of the inner surface of the corpus uteri is composed of the bare muscular substance, from which hang here and there shreds, the remains of the decidua. The mucous membrane of the cervix is, in the great majority of cases, quite complete, with hypertrophied papillæ, glands, &c., and is covered with a good deal of jelly-like mucus; in some cases this is deficient in some places, or up to the os externum." The result of these observations leads Dr. Heschl to dissent from the opinions of Robin and Kilian, who maintained that a new mucous membrane was formed between the decidua and muscular structure during pregnancy; and also from the views of Arnold, who held that as a general rule the mucous membrane of the cervix was lost.

The following table shows the decrease in weight of the uterus:—

	lb.	oz.		oz.
"Immediately after delivery,..............................	1	6	—	8
At the end of the 1st week, it weighs	1	3	—	5
At the end of the 2d " "		10	—	11
At the end of the 5th " "		5	—	6

And in the second month, it comes down to its normal weight of 1½ to 2½ oz.; whence it appears that the most rapid diminution takes place in the second week after delivery."

Dr. Heschl describes minutely the changes which take place in the different structures of the uterus. The peritoneal covering throws out a slight exudation two days after delivery, which causes adhesions to neighbouring organs. "The substance of the uterus undergoes so complete a transformation to molecular fat, that not one single fibre of the uterus existing previous to childbirth, remains behind. This transformation does not commence before the fourth or sixth day, and not after the eighth, pretty evenly at all points; the cervix, for the most part, continuing for a couple of days longer in the condition in which it was just after delivery. Somewhat later, the inner layer is found more advanced in its reconstruction than the outer." The single muscular fibres undergo rapid decay; the surrounding tissue becomes absorbed, and, as a consequence of the fatty transformation, the uterus becomes friable, and continues so till it has returned to its usual condition. Its colour changes from a reddish to a dirty yellow, about the fourth week, the uterus having nearly regained its proper volume, though still yellow and friable. Nucleated cells, and cells drawn out into fibres, appear, and lay the foundation of the young uterine substance.

An interesting fact in connection with these changes, is thus stated:—"Puerperal diseases do not in general check in any appreciable degree this chain of changes, even though the uterus be itself diseased; but on the other hand, the reconstruction, although unchecked nevertheless in divers puerperal processes, both in chronic diseases and uterine malformations (as bicornis, &c.), gives rise to very serious modifications of the malady. These very newly-formed fibres, instead of becoming consolidated, undergo very soon a fat metamorphosis, and this condition gives rise to the marked friability and yellowness of the uterus, existing in such cases as have been just mentioned, even after some months. The 'marciditas uteri' is then nothing more than a deficient reconstruction of the organ."

Among the other transformations or changes mentioned by Dr. Heschl, are occasional swelling of the muscular fibres, while undergoing the fatty mutation, a new formation of the veins, and the greater part of the capillaries, and a similar renewal of the muscular substance of the cervix uteri. In this latter, there often occurs a hemorrhage into its substance, which our author points out as frequently, though erroneously, described as an extravasation occurring at the time of labour, and remaining behind.

The placenta spot may be found elevated even after the fourth to the sixth week, but eventually cannot be observed. Dr. Heschl acknowledges himself unable clearly to describe the reconstruction of the vessels and glands of the mucous membranes; but gives an interesting account of his observations on this point. Doubtless further research will enable him clearly to elucidate it. The two last facts detailed are, that the vessels in the middle of the uterus continue distinguishable on account of their thick walls and size; and that the transformations described follow after abortion and twin pregnancies, although in the latter they take a longer period than after natural labour.

The paper is illustrated with sketches of the microscopical appearances of the structures while undergoing the different modifications. The profession are under a debt of gratitude to the translator, for bringing under their notice this Essay, which is clearly the result of close and accurate observation, and throws much light on a most interesting and hitherto obscure department of pathology.

III. *A Treatise on Diseases of the Heart.* By O'B. BELLINGHAM, M.D., &c., &c. Part I. 8vo. Pp. 252. Fannin & Co., Dublin. 1853.

THE diseases of the heart have always attracted a large share of professional attention. No branch of physiological inquiry indeed, has had more labour bestowed upon it than has fallen to the lot of the circulating system, and no single organ has engaged in its study so much of the talent and industry of the medical profession as the heart. Yet with all our attainments, we fear it may even now with much truth be said, that the organs of circulation still afford ample field for accurate research.

Since auscultation became known to us as a means of diagnosing internal diseases, we have, it is true, made—compared with previous times—great advances in our knowledge of cardiac pathology. Every-day experience, however, teaches us that we have much still to learn; and when we find writers of the highest eminence, and physicians of the greatest experience, differing on points almost innumerable, we cannot but admit, what we are persuaded is true—that we have a great deal also to *un*learn, before we can profit by new acquisitions.

Alive to such reflections, notwithstanding, or rather, we should say, all the more for the great number of existing works on the same subject, we most cordially welcome a treatise on the diseases of the heart, such as our previous knowledge of the talented author would lead us to expect. Dr. Bellingham, we need hardly say, is already well known as the able advocate of the treatment of aneurism by compression; and his contributions to the journals on a variety of points in the pathology of the heart and large vessels, have gained for him the character of an industrious, and at the same time a successful labourer, in this much-trodden yet still fertile field of inquiry. As an author, it is needless, we trust, to do more than remark, he is not to be classed with that large number who are content to copy the conclusions and propagate without question the opinions of previous observers. He is, on the contrary, an original inquirer, subjecting every point that comes before him to a rigid examination; and while he carefully weighs the opinions, often diverse, of the highest authorities, endeavouring on all occasions to found his conclusions not upon the authority of names, but upon the basis of all the reliable facts.

The work before us which elicits these observations, is founded in a great measure, the author informs us, upon clinical lectures delivered at different periods in St. Vincent's Hospital, and that have been published, some in the *Dublin Medical Press*, and others in the *London Medical Gazette.* To such of our readers as may have perused these lectures, we are persuaded we need say little of the admirable exposition of fact and doctrine which they contained. It is enough to know they were so favourably received by the profession, that the author has been invited to publish them in a distinct form. This he has accordingly done, after carefully revising them, adding much new matter, and re-writing a considerable portion of the whole; and the result is the present treatise, which, judging from the first part, which alone has yet appeared, we feel justified in at once pronouncing a most valuable contribution to the literature of the subject on which it treats.

In noticing it at this time, it is not our intention to review the treatise as a whole—for this of course in its present state we cannot do—our object is rather by laying before our readers passages of the work, to induce them to procure for themselves a work which must prove at once a valuable text-book for the student, and to the practitioner a trustworthy record for occasional reference. For we may here observe, that so far as he has gone, the author has succeeded in fulfilling the object of his publication, which has been "to give a concise, though sufficiently complete description of the heart in health and disease; and no point," we believe we may use his own words again, "of any practical importance has been omitted that he is aware of; and he has endeavoured, as far as lay in his power, to assign the credit of every original discovery, or improvement in theory or practice, to its legitimate source."

In the first chapter, where we have the usual description of the healthy anatomy of the heart, under the head of "*White Patch on the Pericardium*," we are at once struck with the great variety of opinion that exists among pathologists, respecting an appearance of so frequent occurrence. In regard to their *seat*, "Baillie, Laennec, Louis, and Todd, state that these opaque patches (milk spots), can easily be dissected or peeled off from the visceral layer of the pericardium, leaving this membrane entire. Corvisart, on the other hand, says, that these patches are seated upon the under surface of the membrane, and that they cannot be dissected off without bringing the pericardium with them. Dr. Hodgkin says, he has met with a few instances where they might be dissected off; but in by far the greater number of cases, these patches depend on a deposit on the attached surfaces. Mr. T. W. King considers the actual seat of the deposit to be the proper tissue of the serous membrane. Mr. Paget says, these patches are generally easily stripped off; but in no case after they are organized, can they be separated from the subjacent tissue without dividing numerous connecting filaments, and leaving the surface from which they are removed, flocculent and shreddy." It may well be supposed that a similar difference of opinion exists in regard to their nature, and the cause of them. Accordingly, we find some who, looking to the fact that they are found on the most healthy hearts, and where the patient has never laboured under any affection referrible to the heart; and that similar opaque patches are found on other viscera covered by serous membrane, are of opinion that they are not to be regarded as a pathological phenomenon at all. Others regard them as the effect of pressure or attrition between the surface of the heart and the walls of the chest; and they find their argument for this explanation, in their more frequent occurrence on the anterior surface of the right ventricle; and Mr. King suggests for them the name of "patches of attrition," or patches of distention. In 40 cases noted by Mr. Paget in which they were observed, 35 presented abnormal adhesions or their remains. He says, "With these spots, there almost constantly coincides some adhesion of organized lymph between adjacent parts of the pericardial membrane;" and in accordance with these observations, he advocates—as do some others—their exclusive origin in inflammation, and supposes them to be always the result of partial pericarditis.

Where authorities differ, it is difficult to determine. In respect to the "attrition" theory, we should regard it as a strong objection, that these patches are met with on parts of the heart's surface where no pressure can take place; and on the other hand, if they are always the result of inflammation, we have then to admit that pericarditis is much more frequent than we had ever supposed, and that it may and does exist very often in a latent form, while the patient is altogether unconscious of anything being wrong. In this difficulty, the evidence of M. Bizot is exceedingly valuable. He recognizes two descriptions of white patches, one probably consecutive to inflammation, the other appearing to be in some way connected with the progress of age. This we regard as the most satisfactory reconcilement of the opposite views that are entertained; and in conclusion on this point, we subjoin a summary of M. Bizot's valuable observations on the form connected with age, which is by far the most frequently met with:—"In 156 subjects he found it 45 times: it is more frequent in the male than in the female. The anterior surface of the right ventricle is its most frequent seat. In 45 instances noted by him, it occupied the centre of the anterior surface of the right ventricle in 20; in 18, it occupied also the anterior surface of the left ventricle; in 7 only it was found exclusively on the left ventricle. The influence of age upon its development is also remarkable. It was not found in the male under 17 years of age, or in the female under 22. After 40 years of age, in both sexes, these patches were not only better marked, but larger."

In the second chapter, we have ample details regarding the size and weight of the heart—the capacity of the cavities—the thickness of its walls, and the measurements of its orifices—the whole forming such an admirable *résumé* of the researches of various pathologists, as would of itself give a permanent value to the work as a book of reference both for the student and the practitioner. The happy manner in which things are described, is deserving of imitation by medical writers; while the plan upon which the author reduces all the more important facts to a summary at the end of the sections, forms not the least valuable feature in the work. Thus, for instance, we are in the following extract furnished at one view with all that we desire to know of the diameter of the orifices of the heart:—

Conclusions respecting the diameter of the Orifices of the Heart.—From the preceding details it appears that,

1. The diameter of all the orifices of the heart is greater in the male than the female, at every age.
2. The diameter of all the orifices of the heart increases gradually from birth to old age in both sexes.
3. The auriculo-ventricular orifices exceed the arterial orifices in size at every age, and in both sexes.
4. The right auriculo-ventricular orifice exceeds the left in size in both sexes, and at every period of life, except in the female between the ages of sixteen and twenty-nine, when, according to M. Bizot, there is a very slight excess of the left over the right.
5. The pulmonary orifice exceeds the aortic orifice in size in both sexes, up to the age of fifty; after this period the aortic orifice slightly exceeds the pulmonary orifice.
6. The mean circumference of the right auriculo-ventricular orifice, in the healthy heart of the male, in advanced life, when the orifices of the heart attain their maximum size—viz. between fifty and seventy-nine years of age—is (omitting fractions of lines) 4 inches 9 lines; of the left auriculo-ventricular orifice, four inches.
7. The mean circumference of the right auriculo-ventricular orifice in the female, between fifty and eighty-nine years of age, is (omitting fractions of lines) 4 inches 1 line; of the left, 3 inches 8 lines.
8. The mean circumference of the pulmonary orifice in the male in advanced life, is 2 inches 11 lines; of the aortic orifice, 3 inches.
9. The mean circumference of the pulmonary orifice in the female, between fifty and eighty-nine years of age, is about 2 inches 8 lines; of the aortic orifice, 2 inches 8 lines.

In the same way, throughout the various branches of inquiry that are treated of in detail, we are presented with an abstract under each head.

In the two following chapters, the author discusses at considerable length, the motions and sounds of the heart. On those highly interesting and still unsettled points, it would be instructive to follow him; but we pass them over to lay before our readers Dr. Bellingham's own views of the heart's impulse:—

Double Impulse of the Healthy Heart.—The impulse of the healthy heart has been almost always described as single; Magendie, however, who attributes the first sound of the heart to the shock of the apex during the ventricular systole, lays it down that the second sound is due to the shock given by the ventricles to the parietes of the thorax during their diastole. "The ventricles in dilating (he observes) in a great measure under the influence of the rapid influx of the blood, give a shock to the anterior parietes on the right side of the thorax, and this produces the second clear sound." Dr. Sibson, in his valuable essay upon the "Changes in the Situation of the Internal Organs," observes:—"A second impulse is often felt in persons whose lungs are diminished, and whose great vessels come close to the sternum.

This is synchronous with the second sound, and must, I conceive, be due to the sudden springing forwards of the walls of the right ventricle after the systole." In the year 1848, in a communication upon the subject of "Aneurism of the Aorta," made to the Surgical Society of Ireland, I called attention to the fact that the impulse of the healthy heart, when the organ is acting vigorously, is double, not single.

The impulse of the healthy heart, I observed upon that occasion, has been always described as single, just as that of aneurism of the arch of the aorta was supposed to be. If we carefully examine this organ, however, when it is beating vigorously, we shall find that a second but slighter impulse is perceptible, which quickly succeeds the other; and, on applying the stethoscope, we shall find that this second impulse accompanies the second sound of the heart; it appears as if the agency which gives rise to the second sound was capable of communicating a distinct sensation to the hand or stethoscope.

In the healthy heart the second impulse is scarcely felt, unless the organ beats vigorously; when the ventricles are somewhat hypertrophied, and their cavities somewhat dilated, the second impulse becomes better marked; when this has arrived at an extreme degree, it becomes very evident, and constitutes, then, the "back stroke of the heart," or the diastolic impulse. This diastolic impulse, except in cases of disease, is never so strong as to be perceptible to the eye, but is readily distinguished when the ear is applied to the stethoscope laid upon the præcordial region. It is perceived at the same part of the chest as the systolic impulse, and is more marked the larger the surface of the heart uncovered by lung, and the stronger the action of the organ.

When describing the motions of the heart, we saw that during the ventricular diastole the apex of the heart recedes from its base, the organ becomes elongated, the ventricles increase in all their dimensions, and the hand grasping the heart is forcibly opened. Now when we consider how closely the anterior surface of the ventricular portion of the heart lies to the parietes of the thorax, there is no difficulty in understanding how an impulse may be communicated during this movement equally as during the ventricular systole; it appears only surprising that it should have been so very generally overlooked.

In chapters 5 and 6, he gives a complete and valuable description of the various modes of examination of the heart in disease, including, of course, at considerable length, the use of the stethoscope. And in the following chapter, we are pleased to find that he does not underrate, as we fear it is too much the tendency to do, those general indications of disease, which at least in the view of treatment, are much more important than any of those nice distinctions which many are apt to deceive themselves with. We would not be supposed to undervalue the importance of paying attention to even the smallest particular in forming our opinion of an individual example of heart affection, as we are sure Dr. B. would not. Our object is simply in passing to enter our protest, against the prevailing tendency to rest contented with the often deceptive information, derived from physical signs when taken alone.

In physical examinations, so far as we learn, Dr. Bellingham follows the usual methods; but as something, though not quite new, perhaps little known yet, we would direct attention to what has been by its discoverers, Drs. Camman and Clark, called *auscultatory percussion*, which as a means of determining the size of the heart, is thus referred to in "Swett's Treatise on Diseases of the Chest," quoted by Dr. Bellingham:—

"A solid cedar cylinder, six inches in length, and one inch in diameter, cut in the direction of the fibres, and with an ear-piece attached, is applied to the centre of the præcordial region, while the ear is applied to the other end, percussion is then made by another person from the point near where the cylinder is applied towards the limits of the heart in every direction." "So long as percussion is made over the body of the heart, a distinct sharp shock is felt directly in the ear; but, as soon as the limits of the heart are passed this sharp shock immediately ceases, and that even in passing from one solid organ to another in contact with it, as from the heart to the liver." "Care must be taken not to confound this shock with that more diffused shock produced by striking the ribs; a little practice will render the discrimination easy." "To make a practical illustration of this method, apply the solid stethoscope over the centre of the præcordia, and percuss upward just outside the origin of the aorta until the sharp shock abruptly ceases—mark the spot, then percuss downward until the shock again ceases—mark this spot also; connect the two points by a vertical line; this will give the vertical diameter, and so with the rest." By this mode of measurement, the mean diameter of the healthy adult heart was found to be as follows, in inches and lines:—

	Male.		Female.	
Vertical diameter	4	0 lines.	3	7 lines.
Transverse	4	4	4	1
Right oblique	4	10	4	10
Left oblique	3	10	3	7

We have only space for one more extract from the work before us; and as the subject is important, was first referred to particularly by the author, and is lucidly stated by himself, we give the passage at length, forbearing for want of space, all comment:

Rough or grating Arterial Murmurs.—It is a very general opinion, that bruit de soufflet is the only abnormal murmur developed in the large arteries. This, however, is far from being the case: a rough, sawing murmur is not unfrequent; but its seat is limited to the arch of the aorta, and it is not confined to the period of the ventricular systole, but it frequently accompanies the ventricular diastole likewise. It is probably owing to these circumstances that the phenomenon has been overlooked, the murmur, when heard, having been confounded with a cardiac murmur.

In a healthy state of the arterial system, the arteries, we know, are constantly filled; when the amount of blood transmitted to them is increased, the artery dilates in order to accommodate itself to the increased quantity; when the amount of blood is diminished, the arterial coats contract upon their contents, and the calibre of the artery is diminished in proportion; but, whether the amount of blood is greater or less, these vessels are always full. This depends upon the peculiar property possessed by arterial tissue, usually termed elasticity, but which is evidently something more than mere elasticity, which is a property common to dead as well as living tissues. The aorta, in a healthy state, possesses this peculiar vital property in a high degree; which is due, not only to its proper fibrous coat, but to its subserous or *sclerous* coat, which, in this artery is very well developed, as first described by Dr. Chevers.

It not unfrequently happens that the coats of the arch of the aorta suffer from disease, which impairs its elasticity; the tube becomes rigid, and its calibre cannot alter with the increased or diminished amount of blood transmitted to it. At the same time the natural smoothness and polish, which its lining membrane presents in the healthy state, is diminished; and the interior of the artery becomes rough and uneven from adventitious deposit; while very generally its calibre becomes increased.

During the systole of the left ventricle, the arch of the aorta is necessarily more distended than during the ventricular diastole: in the morbid condition under consideration, however, as its coats are incapable of contracting upon their contents and as the calibre of this part of the vessel remains the same at these different periods of the heart's action, a vacuum would occur here when the ventricular systole ceases did not the blood regurgitate from the carotid and subclavian arteries to occupy it;

and this can scarcely occur without producing sound, which will, of course, accompany the ventricular diastole and the second sound of the heart.

In this diseased state of the arch of the aorta, not only is the artery rigid and inelastic, but often its interior, owing to adventitious deposit, becomes uneven and rough; there will therefore necessarily be increased friction between the blood and the lining membrane of the vessel, and a murmur will be developed, which will be heard at the period of the ventricular systole, and will be synchronous with the first sound of the heart, and with the pulse. As the ventricular systole ceases, the blood from the large vessels which come off from the arch of the aorta regurgitates into it, and the passage backwards of this fluid over a similar rough surface causes a second murmur, which will, of course, be synchronous with the ventricular diastole, and the second sound of the heart.

When the stethoscope is applied over the first bone of the sternum in this diseased state of the arch of the aorta, a short, double, sawing murmur will be heard, loudest over the first bone of the sternum and audible frequently as low as the base of the heart, sometimes a little lower down, but *never at the apex of* the organ. The first of these sounds is synchronous with the ventricular systole, and the pulse; the second, with the ventricular diastole. Both sounds appear to be near, and both are short and rough, not either prolonged or blowing. In some instances a murmur is present only with the first sound, or even this may be absent, and the second sound may be neither rough nor harsh. This will occur when the arch of the aorta, although rigid and inelastic, has not lost, in any great degree, its natural smoothness and polish, but still permits regurgitation into it: the double sound then heard resembles very closely the double sound of the heart, and is commonly supposed to be it transmitted beyond its normal limits. It may even happen that the arch of the aorta is dilated, rigid, and inelastic, and its lining rough and irregular, and yet no murmur will be developed: this will occur when the heart's action is feeble from softening or other alteration of the muscular tissue of the left ventricle, or when the arterial system is congested; or when the cavities of the left side of the heart are loaded with blood. Under similar circumstances, we know that a murmur may be absent in cases of considerable disease of the valves or orifices.

In addition to the physical signs above mentioned, this diseased state of the arch of the aorta is accompanied by the peculiar jarring of the pulse which was supposed to be characteristic of regurgitation through the aortic valves; by visible pulsation of the carotids; and by a visible and locomotive pulse in the arteries of the upper extremities. The peculiar jerking of the pulse, and the visible and locomotive pulsation of the arteries, depend upon the same cause as where the aortic valves permit regurgitation: here, however, the regurgitation is into the aorta itself. These signs will be more marked if the arch of the aorta, in addition to being rigid and inelastic, is at the same time dilated, and if the action of the heart is strong.

The physical signs of this diseased state of the arch of the aorta have been hitherto confounded with those of valvular disease at the aortic orifice: no writer that I am acquainted with seems to have been aware, that regurgitation into the arch of the aorta, from the larger vessels which come off from it, ever occurs, or that a backward current of blood in this part is capable of developing a murmur. This has probably arisen from the general symptons, in the early stage, not being such as to attract particular attention; and, as patency of the aortic valves is one of the consequences of the long continuance of this diseased state of the aorta, when the latter lesion has been found after death, the symptoms have been referred to it alone.

The form of cardiac disease with which this diseased condition of the coats of the arch of the aorta has been most frequently confounded, is a state of the aortic valves permitting regurgitation, which it resembles in a murmur synchronous with the second cardiac sound, accompanying both morbid conditions, in the jarring pulse, and the visible pulsation of the arteries of the neck and upper extremities, which are common to both. It may, however, be distinguished by the character of the murmur with the second sound, which, in this diseased state of the aorta, is short, rough, and harsh, while in patency of the aortic valves it is usually prolonged and blowing; as well as by the situation in which the murmur is transmitted to the ear. In patency of the aortic valves it is audible from the base to the apex of the heart; in this morbid condition it is loudest over the first bone of the sternum, and it is not heard below the base of the heart; at least, it is very indistinct below this point. Besides, in this diseased state, when a murmur accompanies the second sound, one is likewise always heard with the first, which is not the case in simple patency of the semilunar valves.

SELECTIONS FROM MEDICAL JOURNALS.

I. DR. SHAW ON CRYSTALS IN BLOOD GLOBULES.

Dr. Shaw of Boston in examining blood from the finger found coloured crystals within the blood globules, described by Kölliker as existing in the blood globules of the spleen, &c. of various animals. The crystals were of a yellowish-red colour, having the form of four-sided prisms with angles and edges well defined. These crystals have been found by Kölliker and Funke in the blood of the splenic vein, and in the spleen substance in many animals; also in the cerea fluviatilis, in the blood of the liver, kidney, and heart. They have till recently been seen only when a few drops of blood have been evaporated on a glass, but Funke has now succeeded with great difficulty in obtaining them in large quantities, by the action of water and alcohol through membranes. Lehman thinks they are formed by the union of an albuminoid and a mineral substance, since they present with the usual re-agents for albumen, the same results as albumen.—*Amer. Journ. Med. Sciences.*

II. DR. BUHRLEN OF ULM ON INTESTINAL HÆMORRHAGE IN NEW-BORN INFANTS.

This disease of children is one not frequently met with. The writer has observed two cases. The first was in a well-formed child who was seized eight days after birth with aphthæ and diarrhœa. At the expiry of fifteen days, the child, though much enfeebled, became a little better, until uttering violent cries it passed *per anum* sanguineous grumous matters of a brownish-black colour. These evacuations returned four or five times during the night; the child died in the morning. The autopsy did not disclose any lesion, with the exception of an enlargement of the isolated follicles, which is commonly found as a result of chronic diarrhœa, with which the child was affected. The intestine contained a coagulum of blood.

The second case occurred in an infant born perfectly healthy, which died forty-four hours after birth, after having passed a large quantity of blood by mouth and *per anum.* The entire intestine from the superior part of the jejunum to the extremity of the rectum, was filled with blood more or less coagulated adhering to the mucous membrane. The examination of the thorax displayed two curious anomalies. The lung resembled the lung of a fœtus in its position in the thorax. It was mottled red and blue, and presented at a great number of points a yellow or whitish and anemic aspect. The duct of Botal was open, and represented a third branch of the pulmonary artery of greater volume than the two others, and which emptied itself into the superior lobe of the left lung.—*Gazette Medicale, September,* 1853.

III. DR. WALZ ON SCARLATINA.

Dr. Walz has employed frictions with fat in seventy-four patients with scarlatina: all were cured. In sixty-nine cases there was no desquamation; in four cases there was secondary dropsy, which was easily cured in one case by diaphoretics, in three by sulphur. The same treatment has been employed in measles.—*Schmidt's Jahrbuch.*

IV. MR. MURDOCH ON WHAT IS A "FLUID POUND?"

I BEG to refer you to an ambiguity that appears to me to occur in the last edition of the Edinburgh Pharmacopœia, in the formula for Syrupus Tolutanus; and I trust it will need no apology on my part, in calling your attention to the above subject, as I have not observed any notice of it hitherto.

Apart from the absence of uniformity in the Pharmacopœias at present in use, it must be of more than usual importance that the formulæ should have only one construction, as regards the quantities of ingredients; and that the learned compilers have allowed an ambiguity very considerable to enter their work, I think will be apparent on examining this case, as follows, viz.:—Take of

Simple syrup, two pounds.
Tincture of tolu, one ounce.

I may observe, that it will not be possible to find in the Introduction to the Pharmacopœia any intimation regarding the quantity of liquid which shall form a fluid pound. Therefore, What is the quantity of simple syrup given as two pounds? —is it to be determined by weight? Whatever may have been the intentions of the College here, their instructions on this point are clearly made manifest, that liquids shall be ascertained by the standard of imperial measure; nor is there any prohibition in their work to this being done in every instance. In order that this point may be quite certain, I quote from their Preface, as follows:—"In former editions we directed that the quantities of fluids, as well as solids, should be determined by weight. Measurement, however, is so much more convenient for fluids, that, in practice, it will always be followed; and we have, therefore, adopted, in the present Pharmacopœia, the system of measures of the Royal College of Physicians of London," &c.; and that these shall consist of minim, fluid-drachm, fluid-ounce, pint, and gallon. And again it is said, "The substitution of measures instead of weights, for ascertaining the quantity of fluids," &c. make it evident that all liquids require to be measured, in conformity with these regulations. And here lies the difficulty in the present case, how much by measure is a pound? Shall we consider it as f xij oz., f xvj oz., or f xx oz., the pint imperial?—since these or other quantities might be used in the absence of any Pharmacopœia definition.

The same remarks apply to Syrupus Zingiberis, in the formula for Elect. Opii.

These inadvertencies of our authorities in compounding, which may only be a remnant of the old system of weighing everything, are the more to be deplored, as many of the medical profession imagine that the Pharmacopœia is explicit with regard to a liquid pound; and which is the less easily to be ignored, however anxious we may be to have more certain indications, seeing that it is made use of in the Edinburgh publication.

I may also observe, that in the formula for Enema Cathartica the quantity of olive oil is stated as one ounce, while in that of unguentum citrinum, ceratum, and unguentum simplex, emplastrum lythragyri, and many more, it is called "*fluid-ounces.*" Does this imply that the first is to be determined by weight, as opposed to their own declaration, while the others are by the standard of imperial measure? —*Pharmaceutical Journal.*

V. DR. PUTNAM ON POISONING BY ACONITE.

THE patient swallowed, by mistake, a teaspoonful of the saturated tincture of aconite at seven A.M. Not being fully aware of the danger, she merely took a Seidlitz powder. In fifteen minutes had retching and burning pain in the stomach. Ipecacuanha was immediately administered, by which she was freely vomited. The skin was at this time cold; pulse 100, feeble, regular; fingers spasmodically extended; convulsions of whole body frequent, but of short duration; mind not particularly affected. Friction, with ammonia, mustard, &c. assiduously employed; copious draughts of arrow-root; occasionally brandy and water, and spirits of sulphuric ether. Three hours afterwards she continued to complain of burning pain in the stomach and bowels, but not so severe; pain in the throat and thorax, and in lower half of spine; almost incessant retching and spitting; respiration irregular, spasmodic; pulse feeble, 120, intermitting after every second stroke; had just had one general convulsion, lasting about five minutes, and there were frequent slight spasms of various parts, especially of the fingers; pupils dilated, but contractile on exposure to strong light; mind clear. Tinct. opii gtt. xx. to be repeated occasionally. Immediately after taking the laudanum, she became more comfortable; the spasms and other symptoms less severe. At night, the pulse had become regular, and on the next day she was apparently well.—*Records of Boston Medical Society.*

Ingestion of four grains of Extract of Belladonna and four of Opium, by a child nine years of age, without injury (case reported by Dr. Coale).—The child swallowed two suppositories, each containing two grains of the above-mentioned narcotics. It went to sleep not long after, the mother awoke it at the end of four hours with much difficulty, when very free vomiting ensued, producing great exhaustion. The drugs were taken at noon, and at seven P.M. the child seemed only a little fatigued and sleepy. It had eaten dinner immediately before swallowing the poison, and Dr. Coale supposes it possible this may have retarded absorption.—*Records of Boston Medical Society.*

VI. MR. H. BOWE ON THE ADMINISTRATION OF CHLOROFORM IN EPILEPTIC CONVULSIONS.

THOMAS EASON, aged one year and seven months, was placed under my care on the 7th of April, 1853, suffering from epileptic fits.

The previous history of the case, as obtained from the mother, is as follows:— When the child was five months old, she was awoke early in the morning by a scream, and then found him in strong convulsions: the face turgid, foaming at the mouth, and the hands forcibly clenched. Being much alarmed, she took him to a medical man, who attended him for some time, but gave her no hope of his ultimate recovery, as he feared there was organic disease of the brain. He was subsequently attended by two other medical men; the fits at this period occurring from three to six times in the course of the day. The remedies prescribed seemed to affect neither their force nor frequency. As the mother could not afford to pay for medical advice, the child for some time continued in about the same state without any means being taken for his relief. At the time he first came under my care (April 7th) he frequently had seven or eight well-marked fits during the day. His appearance was very peculiar; the head being either constantly rolled from side to side, or thrown backwards; his face had a vacant and almost idiotic expression. On looking into the mouth, I found the gums covering the upper incisor teeth tense and swollen; they were freely lanced, and an aperient powder given. The child to be put into a warm bath.

10th.—The fits had increased in frequency, the child was no better in any respect. As the gums were still rather tense, they were again freely incised, to have another warm bath, and take another dose of castor oil. As the child was continually rubbing his nose, I subsequently ordered him a powder of calomel and jalap, thinking, perhaps, he had worms. The bowels were freely relieved, but no worms were detected.

From this time up to April 20th, the fits increased rapidly, as many as eighteen occurred in one day, following each other in quick succession. In the short intervals between them he lay in a semi-comatose condition, for three days he took no nourishment whatever, and was evidently fast sinking from exhaustion. Seeing that everything done had failed to give even the slightest relief, I determined to give chloroform a trial.

I commenced giving it internally, in five-minim doses, suspended in mucilage, directing the mother, after every fit, to give a dose of the medicine. On visiting the child the following morning, the 21st, I found that he had slept almost continuously since taking the first dose, and that there had not been any fit. He was quite sensible when awakened to take his food or medicine, of which three doses had been given in the course of the previous day.

I directed the mother to continue the medicine three times daily, and frequently to give small quantities of beef-tea and arrowroot. From this date the child improved rapidly up to May 6th, on which day he was very fretful, and evidently suffering from the irritation caused by the teeth, which had nearly penetrated the gums. The dose of chloroform was increased to seven minims, and a purgative powder to be given twice a-week, after which he was much relieved. I ceased to attend him on May 20th. He was then perfectly well, never having had a return of the fits since the first dose of chloroform was administered.

July 18th.—I have this day seen the child; he continues in perfect health; has cut three teeth, and has not had any return of fits.

I am not aware that chloroform has hitherto been given internally in similar cases to the present. Of course, very little can be argued from a solitary case; but, perhaps, experience will prove that in convulsive affections, especially those of children, we have in chloroform a powerful remedial agent.—*Medical Times and Gazette.*

MEDICAL INTELLIGENCE.

1. *Quarterly Report of the state of Disease in the Glasgow Royal Infirmary.*—The total number of patients admitted to the Hospital during the third quarter has amounted to 911, of which 515 have been received into the Medical and Surgical Department, while the remainder, numbering 396, have been taken into the Fever Wards. So long as the city remains free from epidemic fever, the summer and autumn months of the year are characterized as being less fertile in the production of disease than the colder seasons of winter and spring. The fact is well brought out on a review of the monthly returns of the Hospital for a period of five years subsequent to the epidemic of 1847-48. The total number of patients annually treated has averaged of late considerably above 4,000, and two-thirds of this number are received into the Institution from 1st October till 1st April. It is also worthy of remark, that the more extended results as furnished by the Mortality Tables for the city and suburbs appear to undergo during the same interval a corresponding diminution, and this circumstance will give additional weight to the position which the Infirmary Register may claim, as an index of the general health of the community. Among diseases which have diminished in severity during the present quarter, we have to mention chiefly phthisis and bronchitis, the exciting causes of these affections being favourably influenced by the more genial weather. On the other hand instances of dyspepsia, diarrhœa, and dysentery, have increased in number, but it affords us pleasure to add, that with one exception, all the cases treated for these affections have terminated favourably.

In the Report for the preceding quarter we adverted to the decrease exhibited in the returns of fever cases, and at the same time expressed the opinion that the disease had passed its maximum of prevalence for the year. The continued diminution, though not so great as might have been anticipated, is still sufficiently apparent, as the following numbers will testify:—1st quarter 693, 2d quarter 409, and 3d quarter 396 admissions. It will be observed that the diminution in numbers in the third quarter when compared with the second is of trifling amount, and were we to argue from the experience of the past week, we would be disposed to regard the recent increase of admissions to this department as evidence of the commencement of another exacerbation of the disease, likely to follow a similar course to that already reported. It is now fully established that fever in some form or other is never entirely absent from the densely populated localities of the city, and when it is borne in mind that the combined efforts of Parochial Boards and District Surgeons are used to insulate as far as possible the various *foci* of contagion, by an immediate transference of the affected from their houses to the Fever Hospital, it will scarcely be a matter for surprise that the number of cases sent to the Infirmary should be annually on the increase. Without necessarily showing itself in its old phases of wide-spread visitation, we must for the future be prepared to witness a steady average prevalence of the disease, so long as crime and poverty continue to haunt the dwellers in the wynds and alleys of this great city. Among the 396 cases of contagious disease, admitted during the quarter, 56 have been attended with fatal consequences. Such a high mortality as 14 per cent. of the total cases admitted to the Fever Hospital, is explained by the unusually large number of patients suffering from typhus, who have been received during the quarter. This class alone has averaged above 90 per cent. of the whole admissions, and it is a noticeable fact in the hospital statistics, that in proportion as the number of fever cases diminish, the mortality usually observes an increasing ratio of intensity. The remainder of the cases were chiefly instances of the milder forms of pyrexia, so frequently met with in ordinary practice, and with the exception of the occurrence of relapse in several of the patients admitted with gastro-hepatic symptoms, they exhibit nothing remarkable from what has been usually observed in the course of the prevalence of the disease in the Hospital and elsewhere.

In the Medical and Surgical Department of the house, the diminution in numbers treated is more manifest than in the records of the fever cases. For the last two quarters the numbers are respectively 580 and 515. As was previously remarked, the falling off has chiefly occurred in what are termed purely medical cases, the influence of season being scarcely appreciable in the class of cases that seek admission to the surgical wards. Notwithstanding the slight reduction in point of number, the mortality over the whole series has averaged about 11 per cent., a rate of mortality considerably above the amount of former years, and which has uniformly preserved its high range during the preceding half-year. Many important operations have been performed, and have been attended with a considerable share of success, while not a few cases have proceeded to a fatal issue, which on admission were found to be entirely beyond the pale of operative interference. Among the latter we would class five cases of compound fracture of the skull, with depression and extravasation, as well as several instances of serious compound injuries. It is no unusual occurrence to have patients brought to the hospital suffering from a multiplicity of injuries, any one of which would be considered of a very hazardous nature. A most distressing instance of this kind lately occurred in a young woman who was entangled in the machinery of a print-work in the vicinity of the town, and had the skin and muscles of both thighs, along with the perineum and nates, bruised and lacerated to a most frightful extent. Notwithstanding the shock and appalling character of the accident, this poor girl survived for a period of three days. Among the larger amputations we have to record 7 cases, 3 of the thigh and 4 of the leg; of the former 1 died, the operation having been performed six weeks after the reception of the injury which necessitated its performance. The excessive mortality attendant on secondary amputations from injury, is a result that should be well weighed by the surgeon in his attempts to save life and limb, for there are few points in practice better established than the great dangers accompanying delay in operation. By an analysis of 284 amputations performed in the Glasgow Royal Infirmary during a recent decennium we have been able to trace the following results, corroborating the experience of similar institutions:—

Nature of Amputation.	Total.	Forearm.		Arm.		Leg.		Thigh.		Mortality per cent.
	Cured & Died.	C.	D.	C.	D.	C.	D.	C.	D.	
Primary, ...	169	31	4	34	15	31	22	11	21	36·6
Secondary from Injury,	56	3	...	7	9	6	13	3	15	66
Secondary from Disease,	59	3	2	4	5	14	9	15	7	38·9
Total,......	284	37	6	45	29	51	44	29	43	42·9

Lithotomy and urethrotomy have each been performed successfully during the quarter. The former operation was likely to be unusually complicated on account of the co-existence of congenital hernia with severe prolapsus of the rectum, but these combined affections neither interfered with the operation nor impeded recovery, the patient being successfully relieved of a calculus, composed entirely of uric acid, weighing 204 grains. There have been four cases of excision of the mamma in patients suffering from cancroid disease, one of which terminated fatally six days after operation, in consequence of repeated hæmorrhage, the others were dismissed from the Hospital with at least temporary benefit. In last report we had occasion to allude to a case of brachial aneurism, under Dr. Lawrie's care, in which the tumour had re-appeared some weeks after it was thought to have been discussed by the employment of pressure. It was found, however, that in the interval between this patient's dismissal and re-admission, she had made active use of the previously affected limb, and had by this means brought on a recurrence of the disease. On a repetition of the same curative procedure, the tumour ultimately disappeared, and the patient's residence in the Hospital was afterwards protracted sufficiently long to warrant the inference, that a recurrence of the affection would under the circumstances be barely possible. Among novelties in operation, we have chiefly to allude to a case under the care of Dr. A. Buchanan, in which excision of the ankle joint was had recourse to from caries of the ends of the bones forming the articulation. The results of this unusual and so frequently condemned operation have been in the highest degree satisfactory, the patient, now four weeks since the operation, never having had a symptom that would retard recovery, and the union of the parts in the interval has proceeded as favourably as could be desired. We have also to allude to a case of dislocation of the shoulder of five weeks' standing, where great benefit was obtained in the attempts at reduction by the employment of a fulcrum in the axilla, in addition to the jack-towel used to fix the scapula. This auxiliary agent, suggested by Dr. Buchanan, consisted of an ordinary upright pole with one extremity fixed to the floor, while the other end was steadied by an assistant, the part of it on which the principal pressure was exerted being secured, at the same time, by means of a skein of worsted to prevent bruising of the soft parts. It is obvious that an arrangement of this kind will combine the advantages usually derived from pressing the heel in the axilla, as well as securing extension by means of the pulleys, and in the case alluded to it appeared hopeless to effect reduction by the measures usually recommended.

The anticipated approach of cholera, for a third time in the country, has drawn the attention of the Managers to the best means of meeting the pestilence, should it again revisit the city. With this view they have given instructions that a reception ward should be kept in readiness for such cases as should show themselves, and it is expected that the accommodation thus furnished, will answer the desired end, until more effectual measures are taken by the various parochial authorities throughout the city, with whom the enlarged responsibility now rests of grappling on an adequate scale with each succeeding epidemic. During the outbreak of this disease in 1848-49, the mortality was evidently lessened by the occasional vacation of the infected wards, joined with the liberal use of such disinfecting agents as we possess, as a means of altering, or it may be, of destroying the noxious atmosphere. The employment of a few salutary measures of this kind, will, we are convinced, be found far more productive of benefit, than the legion of nostrums usually recommended in the treatment of a disease which has hitherto baffled all the efforts of medical skill.

2. *Glasgow Medico-Chirurgical Society.*—The fifth meeting of the session was held on Tuesday, 12th July. The president in the chair. Dr. Macewan, jun. detailed a very interesting case of punctured wound of the thorax. The lesion was caused by a piece of broken glass being thrown at the patient, who was a girl of six years old. Profuse hæmorrhage took place; the wound was closed up and sedative treatment adopted, but ultimately an opening again formed, and profuse discharge of sero-purulent fluid occurred. The patient died in about a month. The inspection disclosed a wound in the pleura and pericardium, lung and heart being uninjured. There were also evidences of a certain amount of pleuro-pneumonia.

Dr. Andrew Buchanan then read a paper on "The Stable Nuisance," in which he shows the discomfort and danger attendant upon the prevalent custom of allowing large quantities of stable manure to accumulate in pits in the mews lanes, which separate whole ranges of streets in the western parts of Glasgow. First calling attention to the very strong effluvia which overspread the district, on the occasion of a-half yearly or quarterly cleaning of one of these receptacles, he gave it as his opinion that much of the gastric fever which prevails here is dependent upon, or at least aggravated by these effluvia, and ended by commending such a plan as is adopted in Edinburgh, and in a few isolated cases in Glasgow. The paper will be found at page 359 of the present Number.

The views embodied in the paper gave rise to considerable discussion. Dr. A. D. Anderson and Messrs. Lyon and Reid, while admitting that cleanliness and proper ventilation were conducive, nay essential, to health, combated the propriety of publishing Dr. Buchanan's statements as the opinion of the Society, principally on the ground that it would lead to popular misunderstanding on a subject on which medical men are still in the dark, viz. the origin of fever, that is, the specific cause of fever and other diseases, which they contended were not the products of emanations from filth or decomposing matters; though emanations from such, when in a condensed form, by disturbing health, and impairing strength, favour the reception and strengthen the impression of the specific poisons which occasion endemic and epidemic diseases. Although then advancing the opinion of the essayist might be a step in the way of removing filth, yet in pointing out this as the cause of a particular malady, it was in reality checking the investigation of the true source, yet undiscovered, and fostering that morbid sentimentality already too often substituted for philosophical investigation. The plan of daily removing the ashes, &c. from houses, and of putting these in a heap before the doors for removal, might be adopted in the west end of Glasgow, where, indeed, such could be done with regularity, but could not be extended to the closes and hovels in the lower parts of the town, where the inhabitants in most cases would leave the refuse to accumulate in any corner, rather than carry it out at a stated hour; so that the remedy would be worse than what it was meant to improve.

The sixth meeting was held on Tuesday the 9th August, and was occupied in the discussion of several points suggested by Dr. Buchanan's paper, principally on the influence of want of cleanliness and ventilation on the progress and character of disease.

At the conclusion of the meeting, Dr. Buchanan was requested to publish his paper. The following motion was proposed by Drs. Adams and Morton:—"That the Society are of opinion, that the practice at present adopted in this city of having permanent repositories for filth, such as dunghills and subterraneous caverns, is not only disgusting and offensive, but injurious to the health of the inhabitants: and that the practice adopted in many other cities—that of removing every evening or morning, the impurities which have accumulated during the preceding twenty-hours—appears to the Society to be much superior; and the Society direct their president respectfully to communicate those views to the commissioners of police, for the benefit of their fellow-citizens."

The seventh meeting was held on Tuesday the 13th September. Dr. Pagan occupied the chair. Dr. James Wilson read a case in midwifery communicated by Dr. Rankin of Carluke, being the sequel of a former communication. The case was one of great interest, as it corroborated the correctness of a diagnosis made on a former occasion, but which had been contested by an obstetrical authority of very high standing. We hope to lay the paper before our readers in a future number.

Wm. Lyon, Esq. then exhibited various instruments which he had contrived for the treatment of a peculiar form of stricture of the urethra, consisting of a kind of tongue of membrane stretched partially across the canal, and seriously impeding the flow of urine or the passage of ordinary instruments. The most useful of these consisted of a sort of straight catheter, so contrived that when brought opposite the obstruction a gap is formed on the side of the instrument which receives the membrane, and a cutting edge being made to press against it, a portion is punched out, thus removing the impediment. Mr. Lyon related a case in which the stricture was of the nature indicated, and in which the employment of the above instrument was attended with perfect relief of the symptoms.

3. *Cholera.*—Up till the 10th of September, the total number of cases of cholera in Copenhagen was 7,473, of which 4,057 proved fatal. It appears from the Danish newspapers that the disease has been much more severe in Copenhagen than it ever has been in Berlin. The latter city has from the year 1831 until 1850 been visited five times by cholera, and the following table exhibits the number of cases and deaths in each epidemic:—

1831	cases	2274	deaths	1423
1832	"	613	"	412
1837	"	3557	"	2338
1848	"	2407	"	1595
1849	"	5361	"	3552

An interesting fact is stated in the official return, with reference to the last of these epidemics, viz. that in cases treated at home the mortality was 70 out of 100, while in cases treated in the hospital it was only 56 out of 100, "which," the statement adds, "deserves the more to be noticed, as the cases sent to hospital were generally the most severe."

The cholera has appeared and is raging with great virulence in Newcastle and Gateshead, while cases have occurred in Liverpool, London, Edinburgh, and we are afraid we must add Glasgow. Measures have been promptly taken by the authorities to cleanse out the filthy localities of the town, but it appears to us that immediate steps should be taken by the formation of local Boards of Health, the appointment of District Medical Officers to assist the Parochial Surgeons, and the erection of small wooden buildings, capable of containing 15 or 20 patients, in different parts of the town, to be thoroughly prepared for it when it disseminates itself more widely.

The deaths in New York for the week ending the 20th ult., were 969, of which upwards of 400 were caused by the extreme heat.

4. *Cholera at Newcastle.*—From the 31st of August, on which day the first case appeared in Newcastle, up till the 23d of September, the number of deaths from cholera was 995, and from diarrhœa 67, making a total of 1,062. The maximum number on any single day occurred on the 20th, no fewer than 118 having died on that day.

5. *Appointment of Dr. John Charles Steele to Guy's Hospital.*—We have much pleasure in announcing that this gentleman, who has for the last six years fulfilled the duties of Superintendent in the Glasgow Royal Infirmary, has been appointed to a similar situation in Guy's Hospital, London. We need hardly remind our readers of the zeal and diligence with which he has conducted the department under his charge, and of the improvements which have been carried out through his agency. Dr. Steele is known to the medical world as the author of valuable statistical papers on typhus fever, in the *Edinburgh Monthly Journal*, and on the increase of small-pox in Glasgow, in the *Glasgow Medical Journal*, while the paper which appears in this Number still further shows that he is habitually turning his mind to those large subjects, which the daily practitioner has rarely leisure or opportunity to investigate. Dr. Steele has always been much respected by the clerks who have lived in the House during his superintendentship, and is much esteemed by his medical brethren. We heartily wish him every success and happiness in his new and higher sphere in the metropolis.

BOOKS RECEIVED.

On the Use of an Artificial Membrana Tympani in Cases of Deafness. By Joseph Toynbee, F.R.S. London: Churchill, 1853.
A Treatise on Diseases of the Heart. By O'B. Bellingham, M.D., F.R.C.S. Part I. Dublin: Fannin & Co., 1853.
Practical Observations on Aural Surgery, and the Nature and Treatment of Diseases of the Ear. By William R. Wilde, F.R.C.S., Ireland. London: Churchill, 1853.
A Practical Treatise on Sea Bathing and Sea Air. By George Hartwig, M.D. No. 1 of Highley's Popular Medical Series. London: Highley, 1853.
The New York Journal of Medicine and the Collateral Sciences, May, 1853. (In Exchange.)
The New Orleans Monthly Medical Register, June, 1853. (In Exchange.)
The Edinburgh Journal of Medical Science, July, August, and September. (In Exchange.)
The Association Medical Journal. Weekly. (In Exchange.)
The Journal of Psychological Medicine. Quarterly. (In Exchange.)
The Boston Medical and Surgical Journal. Monthly Series. May, June, July, August. (In Exchange.)
The Medical Chronicle, or Montreal Monthly Journal of Medicine and Surgery, June, July, and August. (In Exchange.)
The Southern Journal of the Medical and Physical Sciences, May. (In Exchange.)
The Dublin Quarterly Journal of Medical Science, August. (In Exchange.)
The American Journal of the Medical Sciences; July. (In Exchange.)
The Dublin Medical Press. Weekly. (In Exchange.)
The Medical Circular. Weekly. (In Exchange.)
Thirty-Second Annual Report of the Glasgow Institution for the Education of the Deaf and Dumb. 1853.

BELL AND BAIN, PRINTERS, GLASGOW.

THE

GLASGOW MEDICAL JOURNAL.

VOL. I.] JANUARY, 1854. [No. 4.

ORIGINAL COMMUNICATIONS.

I. *Reminiscences of Hernia.* By WILLIAM LYON, Esq., one of the Surgeons of Glasgow Royal Infirmary.

(Continued from page 174.)

CASE 16.—An elderly woman had been ill for five days with symptoms of strangulated hernia, while the hernia was not observed by her professional attendant until immediately before I was called in.

She had had numerous doses of powerful purgatives, and various enemeta, without induction of fæcal discharges.

The illness began on Wednesday, and tumour was not observed until Sunday evening. I saw the patient on Monday, and, assisted by the late Mr. Douglas and the first attendant, proceeded to operate. I find in note-book:—"Two or three thin fasciæ were divided on director, when a more dense one, of faint red colour, and on which were firm pellets of fat, was arrived at, and entered by pinching up with forceps, and cutting horizontally. A *very dark, red, smooth* tumour, the parietes of which felt *thick*, when rubbed between fingers. now presented. At one or two points it adhered slightly to the sac enclosing it, but these were easily lacerated, and upon passing finger towards femoral opening the tumour was felt tightly grasped by border of Poupart's ligament, so much so that difficulty was experienced in passing director under constricting part."

Upon examination of the tumour, supposed to be intestine, although no arborescent vessels were observable on it, a small quantity of what by appearance and smell was evidently fæcal matter, passed from a minute opening, which had irregular and ash-coloured margins, and was situated on internal aspect of tumour.

A tenaculum was passed through margin of opening, which being drawn together by a fine ligature, the ends were cut close off, leaving a prominence the size of a pea, and the stricture being divided the intestine was easily passed into abdomen. It would be useless and tiresome to give daily reports. Let it suffice, that she was only allowed the smallest quantities of food and drink, and had small doses of calomel, with larger of opium, with the view of keeping the intestines as much at rest as possible, and averting or subduing vascular excitement; that scarcely an untoward symptom occurred, and that in course of three weeks she was out of bed perfectly recovered.

Here is a case proving the correctness of my former statements; only the opening in the intestine was caused by ulceration, while I concluded, though possibly incorrectly, that in the other instances, sloughing had been the cause of the destruction. Had the intestine been returned without the opening having been observed, doubtless the issue would here too have been fatal. Two modes of treatment offered: first, the one followed; second, to have left the injured part of intestine near femoral opening, with or without enlargement of the ulcerated point. By the latter plan fæcal matter might still have passed into peritoneal cavity, though surrounding equable pressure would have limited the quantity; while, had the ulcerated point been enlarged, and kept near external wound over falciform process, there would have been so much doubling of intestine permitted, as in all likelihood to have ensured a permanent artificial anus.

In any instance, though the opening, or from appearances, the probability of its occurrence exists, and though considerably larger than that just described, I would consider the treatment practised as by far the best under the circumstances. I think likewise, that keeping the intestines as empty, and by opium as much at rest as possible, must diminish the risk of fæcal matters escaping, and promote that adhesion of surrounding surfaces by which permanent closure, and escape of ligature into canal of intestine, are effected.

Case 17.—A middle-aged man residing in the country, had been treated for several days by a surgeon; I forget whether the hernia had been undiscovered, or time worse than uselessly employed in attempts at reduction. Being asked to visit him, and aware I would likely require to operate, I requested a practitioner to accompany me. It was a large scrotal hernia; and though the time which had elapsed from the strangulation commencing, and the kind of treatment pursued, diminished the chances of success, we thought ourselves called on to operate. There was little difficulty in reaching a voluminous intestinal protrusion, excepting what arose from division of some rather unusually large and freely bleeding arteries. No constriction could be felt in the usual situation, and yet reduction could not be effected, as was at first supposed, from great distention by flatus. Further manipulation, however, showed that the intestine was firmly held down and strangulated in lower part of scrotum, where, after a rather lengthened search, occasioned by confusion from bleeding and numerous folds of intestine compressed into small space, a tense band was felt, division of which instantly relieved the compressed parts, which were then easily returned. Hiccup, tympanitis, and pain in abdomen, symptoms of low peritonitis, induced in great measure by the strangulation, and too long delayed operation, occasioned the death of this patient in two or three days. Such bands or septa, formed I suppose sometimes from effusion of organizable lymph, and at other times by unequal distention of the hernial sac, are frequently met with in preparations of hernia, and are, as in this case, occasionally the causes of strangulation.

The danger of delay was again shown here: it was the effects of strangulation, and not those of the operation, which I feel assured destroyed the patient. The symptoms of peritonitis *preceded*, they did not succeed, the operation. Blame may be imputed for operating. We knew not, however, but that the peritonitis would subside after and from the operation; and that it would certainly proceed to a fatal termination without it. Besides, though the pulse, the pain, and the presence or absence of tympanitis, abdominal distention, and the duration of the strangulation, afford assistance in determining the states of the abdominal and hernial contents, they do not give precise information. Sometimes these states are found a great deal better, at others much worse, than the symptoms would lead us to predict; and, therefore, it is only in extreme circumstances the patient is not entitled to the chances from the operation, though only a forlorn hope be afforded. I could relate several other instances, where, either from the hernia not being timeously discovered, from culpable dependence on inefficient measures, or from both, the operation had not a fair trial, could not conscientiously be withheld, and yet failed.

Case 18.—The late Mr. J. Gray and Dr. A. Thompson asked me to see a woman about sixty years of age, whose femoral hernia had been some days strangulated.

I operated, and experienced the not unusual difficulty, that of returning the protruded intestine, after free division of the stricture. In trying to effect this, so soft was the peritoneal coat of the intestines, that at one or two points it peeled off to the extent of a sixpence or so. Nevertheless the patient had an uninterrupted recovery. Was not this softening a precursor of what a little further delay would have insured to terminate in ulceration? and then the danger of the operation would have been greatly increased. It very markedly shows, likewise, the hazard of the taxis after strangulation has been of considerable duration; although this is, of course, modified by amount of constriction, and other causes. The limited laceration and removal of the peritoneum here, was insufficient to occasion bad symptoms. But had the taxis been forcibly employed, the laceration might have been extensive, as in the instance formerly related, and the result similar. The absence of all untoward conditions after reduction, the parts being so injured, may be taken as a lesson in abdominal surgery.

Case 19.—A middle-aged man, grossly intemperate, had a large scrotal hernia. Assisted by the late Mr. Easton of Calton, I operated; and as the strangulation had been of considerable duration, I opened the sac, which, had the protrusion been recent, I might not have done. The portion of intestine was of great extent, and distended, but not to a great degree, with flatus. The inguinal opening was large, but its edge being sharp and tense, was divided. The fingers could now easily pass into abdomen, but every effort to return intestine was fruitless. It was as far as possible emptied of flatus, abdominal muscles were relaxed, by approximating pelvis and thorax, and flexing limbs; and while one portion of bowel was retained by fingers of one hand, another portion was urged in by those of the other. All would not do. No sooner was a piece introduced than another protruded. A large extent of bowel and mesentery was thus handled, turned from side to side, pressed, and exposed, I am sure, for half-an-hour; when at last, when almost hopeless, our perseverance was rewarded by success. Hiccup, vomiting, painful and tympanitic abdomen, with a small very rapid pulse, kept us for several days in fear of a fatal termination. But drunkard as he was, he in a short while passed through the valley of death scatheless. I suppose the vigorous constitution which resisted for years the effects of his daily intemperance, carried him through dangers under which an ordinary habit, even aided by sobriety, would have sunk.

Case 20.—The old, large scrotal hernia of Mr. M. became strangulated, and remaining so after every judicious measure, Mr. W., his attendant, sent for me, and our conjoined exertions failing, we agreed to operate. The hernia being large, and the strangulation recent, I wished to avoid opening the sac. After dividing, however, all the superficial tissue over neck of sac, we found reduction impracticable, and therefore entered the sac. There was a large extent of much distended intestine, which, as in the former case, resisted our best directed and combined efforts for a very considerable time. The inguinal opening was large in relation to its size, as usually met in such circumstances, but small in proportion to the volume of distended bowel. The strangulation might, therefore, have been said to be more the result of distention than constriction. No great wonder the hernia was irreducible by taxis before operation, and after division of all but the neck of the sac, when even now, exposed, and with every other advantage, to return it was found impracticable. By compression with the hand, we tried to push in the contents of the bowel; we retained one portion, while another was pushed after it; we tried the superior, and then the inferior extremity of the protruded portion. It was thus for a long time exposed, necessarily roughly handled, and the patient thereby pained and depressed. I had nearly become hopeless, and was about to adopt more decided measures, when, from some fortuitous and unobserved changes, reduction was effected. The bowels soon acted, and all circumstances promised a favourable result, when abdomen became tympanitic and pained, vomiting frequent, pulse small, soft, and quick, and in opposition to the treatment we considered most suitable, the patient in a couple of days died.

Thus one of those cases was lost, and the other most narrowly escaped. That the untoward symptoms were in both instances occasioned by the long exposure and rough usage which the protruded parts suffered, cannot, I fear, feasibly be denied. It may appear surprising to those who have not attempted reduction, or who have not seen it attempted, that such difficulty as I have stated should have been experienced. The trial will alone instruct; and I am unaware of any measures short of puncture or incision into intestine, to permit escape of contents, other than those we employed. True we succeeded without either procedure, but not until the parts had been long exposed and much handled; and the important question is not the ultimate success of the attempted reduction, but whether moderate exertion having failed to reduce, puncture or incision into intestine would not have been a less dangerous practice than that followed. I believe the difficulty in the main arose from distention by flatus; and it will be supposed this might easily have been pressed onwards into intestine within abdomen; but be it recollected intestines within abdomen were equally distended as the portions protruded, and the difficulty will be more apparent.

Granting puncture, or very small incision, into intestine, a less evil than protracted and almost necessarily violent manipulation; which conclusion is corroborated, in so far as the limited number permits, by the case of ulcerated opening into intestine, and by the two last cases detailed; it becomes requisite to determine whether puncture or incision is to be preferred. Puncture, with a sewing needle, as we all know, freely permits slow escape of serum from an anasarcous limb or the like; but whether gas would pass by a similar opening from intestine, I am unaware. At all events, I suppose it would pass so slowly as not to answer the purpose in the contemplated circumstances; while if unligatured, I am not convinced it would not allow passage of fæcal matters after return, which, in the most minute quantity, we have every reason to believe would prove detrimental, if not certainly fatal.

Let the puncture, however, be tried, and if insufficient, a snip with scissors at the same point can be made, which having served its purpose should be surrounded by a ligature, the ends cut close off, and the bowel returned, as in the instance related. If any fæcal matter passes over protruded intestine, I need not dwell on the importance of its entire removal previous to reduction.

In advocating the practice of puncture or incision, I am conscious I expose myself to the charge of temerity, and, it may be, of improper treatment. I appeal, however, to the experienced, if I have overstated the difficulties or dangers of the condition to be obviated; to the fact of my own limited practice, as above detailed, to the convictions of surgical practitioners, as inferred from the statements I have offered, and their own observations.

Case 21.—I was present at an operation for strangulated hernia, when the surgeon, having arrived at a small tumour, became doubtful whether it was the sac or contents. He decided, however, it was the sac, opened it, and found he was in the intestine. I forget what became of the patient.

Case 22.—I was asked by a practitioner to operate on a woman who had a femoral hernia of several days' duration. A small, reddish, insulated tumour was exposed. Uncertain whether it was the sac, or a piece of intestine, its colour, consistence, and thickness were carefully examined. It was pinched between points of fingers and rubbed to ascertain its thickness and consistence; and the points of fingers depressed to feel if any firm contents could be detected. I also examined the constricting part, thinking it would supply information, but was disappointed. Thus exerting all the care I could, I rather leaned to the impression that the sac only had been exposed; and slowly and hesitatingly pinched up, and divided layer by layer of tissue, when to my great surprise and regret, I found I had entered the intestine.

The stricture was now relieved, the bowel returned, and the opened part retained just within the deepest part of the external wound, by a point or two of suture. The patient was at first relieved, but the peritonitis, induced by the strangulation, persisted, and, as shown by post mortem examination, was the cause of the fatal result.

Here, then, proceeding with all the caution and knowledge we possessed, we fell into the very error we were striving to avoid; either proving our ignorance, the difficulty of distinguishing one tissue from another in hernia, or both our ignorance, and the difficulty stated. There was no rashness; we were examining, reflecting, feeling our way, and yet we plunged into the very danger feared. The difficulty encountered was just one of those I formerly referred to, as occurring in operations for hernia, of which the case where the hernia was returned *en masse* was a proof; and is the source of that hesitation, confusion, and dismay which the inexperienced surgeon feels in the progress of the operation, obliging him to look around for that information he should himself possess; and which difficulty in truth constitutes the main embarrassment, and it would appear the danger too, of this operation. So far as the danger of opening the intestine is concerned, it can only happen under one of two conditions:—*First*, when adhesion of the sac and intestine exists; *secondly*, when there is no fluid in the sac. When fluid is present, which is very generally the case, its escape allows collapse of the sac, within which the strangulated parts cannot be mistaken. When fluid is absent, the sac and protruded parts are in the closest contact; by it being awanting, the sac may be passed through without recognition; and on the supposition that, or doubt whether it has been divided, the mistake related happened, and I fear may again occur. I cannot pretend capability to point out how this serious error is *certainly* to be avoided. The tissues covering a hernia can be so subdivided, that anatomical knowledge, though not to be slighted, will not avail. Neither can consistence alone be depended on; nor can colour, which varies with the degree and duration of the strangulation. To be sure, when the strangulation has been of long duration, contrast of colour will usually be observed between the sac and intestine; but then observation of the contrast may be afforded too late to be useful; and when the strangulation has been recent, the colours of the two tissues are not materially different. Reasoning on this matter, I infer the colours of the sac and intestine will be greatly dependent on whether the sac as well as the intestine, (for the mistake can only happen with intestine,) has suffered strangulation; for if free circulation in the sac be prevented, by its neck being tightly grasped where it escapes from the abdomen, its colour will closely approach that of its contents. The sac, however, is generally *pale* in *comparison* to the strangulated intestine, presenting nearly the shade of healthy peritoneal membrane. It is thinner, as felt when rubbed between the fingers, being only the thickness of normal peritoneum, excepting in old protrusions, where it has become hypertrophied; while intestine feels much thicker by containing muscular and mucous tissue in addition to its peritoneal covering. The sac also usually feels *firm*, dense; the intestine *soft*, when rubbed between fingers. Comparatively there is a difference of their *surfaces*, too, the intestine being much more *clear* and *smooth* than the sac. A more certain guide than the thinness, the firmness, or the absence of the glutinous smoothness, to distinguish between sac and intestine, is afforded by the feeling communicated when the doubtful tissue is pinched up by the fingers, and their points gently depressed. If it be the sac, the contained intestine can be felt, as the finger or hand can, the glove or skin being treated as the sac; but much tension or close adhesion between sac and contents, will evidently deprive the surgeon of information from this method of diagnosis.

Writers on this subject state, as a means of diagnosis between the sac and intestine, the different manner in which their vessels ramify; being irregular on the former, and in an arborescent form on the latter. On large and recent intestinal hernia, this may possibly be observable; on the small and long strangulated I have not been able to remark it; the capillary congestion and sero-sanguinolent effusion giving a *deep general* tinge.

As a description of the most usual appearances, I extract the following from my note-book:—

"After incision of skin, and part of superficial fascia, one or two thin fasciæ were divided on director, when *a more dense one*, having firm pellets of fat on it, was arrived at, and entered by pinching up with the forceps, and cutting horizontally. *A dark red smooth* tumour, the parietes of which felt thick when rubbed between the fingers, now presented. At one or two points it adhered slightly to the sac, enclosing it, but these were easily lacerated," &c.

In another case, I remark from my notes:—"The superficial fascia was distinctly observable; there was then a very thin one, and several others were divided, when some doubt occurred as to whether the presenting part was sac or intestinal protrusion. The doubt was felt as to some tissue of a *pale* bluish-red *colour;* it was decided to be the sac, was incised, when a small quantity of dark red fluid escaped. The incision was enlarged, and the intestine, of a *dark red* colour, much smoother than the tissue which occasioned doubt, was exposed. No arborescent vessels, as described by some authorities, were to be seen upon it; it was, however, evidently very vascular, bleeding freely when a minute portion was shaved off, and turned out to be intestine."

It may be asked why I did not treat the wounded intestine by ligature, and return it, being the practice I have advocated in such circumstances. I did not, because the wounded intestine was in a very unhealthy-like state, and symptoms of acute peritonitis present, which I thought might be relieved by the immediate discharge from the artificial anus.

Case 23.—As a contrast to those unfortunate cases, and though superfluous, as showing the proper conduct of the surgeon, I detail one or two instances where the patient was seen soon after the occurrence of the strangulation, and where the operation was performed without delay, in which circumstances *I have never lost a patient*, nor have *seen* any *others* lose *one; proving* that it is not the operation which kills, but the complications in the protruded parts and peritoneal cavity, which are *permitted* to arise.

At eight morning I was called to a young man, whose congenital inguinal hernia I found had been strangulated since midnight. A trial of the taxis, with attention to every kind of aid, failed. He was thoroughly prostrated by tartar emetic, distention removed by a purgative enema, and the taxis again practised without success.

Being prepared to operate, and Dr. Macfarlane meeting me at one o'clock P.M., and coinciding in opinion, I exposed and returned a large portion of congested intestine. Some excitement followed, which bleeding and small doses of calomel soon subdued, and in a week the patient was sitting up.

Although the inguinal opening was large and direct in this patient, the adhesion and matting of parts from the operation were so great, that protrusion did not afterwards recur, enabling him to dispense with the truss. This is the only instance in which I have seen such a fortunate occurrence; the more remarkable from the opening being direct. Whether it offers a hint for induction of inflammation, effusion, and adhesion, subcutaneous incisions, seton, or injection, in oblique descent, I leave for discussion.

Case 24.—The servant of a poulterer, a young healthy man, had had his congenital inguinal hernia strangulated for several hours before I saw him. Ordinary measures, as in the other case, failing, I operated within three or four hours of first visiting him. He never had a symptom requiring interference, and made the most rapid recovery I have witnessed, the wound being perfectly cicatrized, and the man at work on the eighth day after the operation.

There exists a discrepancy of opinions and practice as to the proper treatment after operation. But no universal rule applies; it must be modified by conditions: stimulants are demanded in one, antiphlogistic practice in another. Where no contra-indication is present, I have been in the habit of commencing with one or half-grain doses of calomel, every hour or two. It is easily taken, does not offend by its bulk, acts as a gentle laxative, and by this, and its constitutional effect, averts, and if present subdues, the danger most to be feared, peritonitis.

I could relate many other successful cases, but my object has been to detail only such instances as have presented some specialty. I repeat, that out of a great many I have operated on, and have seen operated on by others, I do not recollect one lost, where the operation was done soon after commencement of strangulation. That I have seen a good many recover at a time distant six or seven days after strangulation; but these, I consider, were irreducible, more from bulk of the protrusion than tightness of the stricturing part; more incarceration, in truth, than strangulation, and therefore less severe complications arose. Two or three I have seen die, reaction never occurring; several have sunk from peritonitis induced before operation; but all go to strengthen the general belief, that it is the complications too often permitted to arise by the inattention or ignorance of the surgeon, and not the necessary effect of the operation, which destroy.

A few hours suffice for trial of the taxis, and all means which can aid it, and I consider every one culpable who permits delay longer than required for a judicious trial of these.

Case 25.—A professional friend requested me to accompany him to the country, to visit a patient with strangulated femoral hernia. He had proceeded with the operation until a director was required on which to run the knife for division of the stricture, when to our dismay it was found he had not brought such an instrument. The stricture was too tight to admit point of finger, and we were for a moment in perplexity, when it occurred to us the handle of the scalpel might serve our purpose. It was slid under the stricture, the knife run home upon it, and the operation finished without difficulty.

The circumstance is scarcely worth note, excepting to show the impropriety of proceeding to any operation until it has been mentally performed, and the necessary instruments laid out.

Recollection of the substitute employed may also be useful in case of emergency. Indeed, while writing this, it occurs to me the handle of the scalpel might frequently advantageously displace use of the director in this operation. It is less apt to catch on the tissue while being introduced; so far as bulk goes, the one will generally pass if the other will; while by its greater breadth the handle of the scalpel will better depress and prevent that bulging over of the intestine, by which it is greatly endangered, during division of the stricture.

Case 26.—My friend, Dr. P. Stewart, asked me to see with him a stout, hale man, about seventy years of age, whose large and usually easily reducible scrotal hernia had been strangulated for several hours.

The taxis, with all ordinary aid, failing, I divided layer by layer over inguinal opening, until I arrived at neck of sac. I found it, in relation to the tendinous aponeurosis forming external ring, comparatively relaxed; and upon gentle compression the protrusion readily receded. A few sutures were inserted, a symptom requiring interference did not arise, and in a very short while the patient had perfectly recovered.

I have followed similar practice in other cases, but have failed to obtain its advantages, from the neck of the sac forming the cause of the strangulation.

In so far as the mere operation is concerned, its danger must be in proportion to the lesion, extent exposed, time of exposure, and manipulation of peritoneal surface; and I need not dwell on the diminution of danger obtainable from leaving the sac unopened, the protruded parts unexposed and exempted from manipulation. The cases in which the practice is alone admissible are too well known to require mention.

Thyroid Hernia.

Case 27.—Many years ago an elderly female was under my care, with all the usual symptoms of spasm in ureter, viz. pain extending from left lumbar to hypogastric region, down thigh, occasionally over abdomen, and accompanied by frequent micturition, vomiting, and constipation.

In a few days she died, when, in place of the post mortem examination corroborating my diagnosis, I found a portion of intestine impacted in left thyroid opening, and in such a state as to account for the fatal issue.

I write from memory only; but, as the case impressed me strongly, I recollect perfectly that neither by references of patient, external appearances, nor manipulation, was there the slightest guide to the locality or nature of the disease.

Whether there was any special conditions present by which unusual pressure was made on obturator nerve, causing reflex action along lumbar plexus, and occasioning the pain and the frequent contraction of bladder, I can only surmise, though it is the only explanation of the symptoms which occurs to me.

All who have seen many cases of strangulated hernia, are aware how often the patient fails to refer the surgeon to the tumour, and how often it is exempt from pain, the uneasiness being principally in abdomen. In this instance, not only was there no pain in site of strangulation, but there was no tumour to which patient could refer; while there was a train of symptoms, viz. the occasional pain, shooting in direction of ureter, accompanied with very frequent micturition, and with vomiting, &c. not like the usual symptoms of strangulated hernia, and exactly those met with in impaction of calculus in the ureter, or spasm in that tube, from some other cause.

I am unable to state whether the symptoms which existed in this instance have been met with in other cases of thyroid hernia, but this instance points to the propriety of rigid examination, lest a like mistake in diagnosis be again committed. The protrusion was too small in this patient to have formed a tumour observable where so thickly covered by muscular and other tissues, as in thyroid foramen: but still, if its existence had been suspected, careful inquiry might have led to the detection of pain, hardness, or possibly fulness, in the locality of the disease, which, with the general conditions, might have pointed out its nature and relief by surgical procedure, as I remark in the periodicals, was recently effected in a similar case.

I shall only add, let this detail be remembered when symptoms of calculus impacted in ureter are present. Until the post mortem examination was made, I had no conception but that the patient had died from calculus, and maintain I had no reason to infer ought else. Not so, however, those who now hear me, if placed in like circumstances, as they have my case for a beacon.

Umbilical Hernia.

I have seen at least three fatal cases of strangulated umbilical hernia. One was unobserved by the surgeon until too late for operation to be useful. In an other, there was so much delay in the vain hope that distinct, though not very urgent symptoms, would subside, that the operation was unsuccessful.

In the third, there was so much procrastination from a doubt expressed by a majority of the consultants as to whether hernia was present, and opposition to innocuous exploration to decide the doubt, that the patient was permitted to die, without the interference which, by the post mortem appearances, could alone have saved her. All the patients were females, and two of them very obese, in which condition there is much circumscribed and firm deposition of fat around umbilicus, causing suspicion of hernia, although absent, and indistinctness even when present.

It is surely inexcusable, however, to permit a patient with symptoms of strangulated hernia, and the presence of a tumour of dubious character, to die, without exploratory operation, which, if hernia be present, can alone save, and which, though absent, is not likely to destroy.

Internal Hernia.

External herniæ are sometimes obscure and difficult of treatment: much more so are internal, where we have not the advantages of sight and touch to guide us to their locality, and aid in their removal. Exception, I know, may be taken to the two following cases being called hernia; they so closely resembled hernia, however, that I waive exact definition, and abide fastidious criticism.

Case 28.—I was called in consultation to see an adult female who had laboured under obstruction of bowels for several days in opposition to the most judicious and energetic treatment.

A few months previously she had had a similar but milder attack, and recurrence of slight attacks, up to present illness.

She had now vomiting, hiccup, painful and tympanitic abdomen, and quick small pulse.

Purgatives and enemata, of all kinds, and insufflation through long tube, had been employed, and every means to avert and subdue inflammatory action, and there was nothing to hope, and much to fear, from their repetition. Neither manipulation, percussion, nor feelings of patient, afforded any evidence of the cause or exact locality of the disease.

The operation of opening abdomen and searching for obstruction was discussed; but the vagueness and mystery as to the kind or seat of the disease, and the danger of the procedure, deterred from its performance.

In the meantime, six or eight days from commencement of the illness, the patient died.

Inspection exposed the usual consequences of peritonitis, with much distention of small intestines. It was only after a long continued and very careful inspection, with all the advantages of abdominal contents being completely uncovered, that the cause of the obstruction, as shown in the preparation now in my possession, was discovered.

This cause consists of two slender bands, about half-an-inch in length, attached to adjoining convolutions of intestine, and embracing and compressing ileum near its termination, in cœcum so tightly, as to produce almost complete obstruction, and also partial strangulation.

How to explain it I know not, but it is a well-ascertained fact, that disease of this kind is oftener met with near termination of ileum, than in any portion of intestines. There can be no doubt that the bands in this instance are the products of inflammation on two adjoining convolutions, the effusion of lymph, the separation of the surfaces by distention of the now enclosed ileum, and then elongation and organization of the effused material.

When I first saw this patient, the time for employing purgatives in any form had passed. They had had a fair trial, their beneficial effects were exhausted, and to have repeated them was only to have increased irritation and depression. The causes of obstruction are various; but, in such conditions, I consider it should be a maxim with the surgeon, after having given a full and fair trial to all of what may, though not quite aptly, be called the general and local means for procuring evacuation: to stop short with these, and to use such as are most likely to avert and subdue inflammation, remotely to act on bowels, and at all events, are the only measures for allaying sufferings of patient. It is only by full and frequent doses of calomel and opium we can accomplish those indications, husband the strength of the patient, and afford time for nature to exert her curative endeavours.

Those endeavours will of course vary with the cause of the obstruction. I can only surmise how this patient recovered from the first attack, but think it probable it was by the extension of the newly formed bands; and it is easy to conceive her having been instantly relieved in the second seizure, by the distention having occasioned laceration of one or both bands, with or without previous ulceration.

I have stated that the advisability of opening abdomen, and searching for the cause of obstruction, was mooted. And I have pointedly noted, that at the post mortem inspection, with all the facilities we possessed, much time and care were required, and much difficulty was experienced, before either the locality of the obstruction or its nature was discovered. All these I have repeatedly experienced in somewhat similar cases. And if, even after death, it is difficult, amidst the numerous and voluminous convolutions of intestine, to find the seat of obstruction, how much more so during life, with a limited opening, protruding bowels, and dependence on sense of touch in place of sight?

To decide when obstruction arises from a functional, when from a mechanical cause, is always difficult, and generally impossible.

And it is not easier to state indications as to the time we should forego medical, and resort to purely surgical procedure.' Nor is cessation of the obstruction any proof of its having been dependent on a functional source alone; for, as in the case detailed, many of the mechanical sources of obstruction are capable of removal by natural processes.

The time, then, the place, and the manner, which should be chosen for operating in cases of obstruction, can scarcely with precision be indicated, but must in great measure be determined by the specialties present, and the skill and judgment of the practitioner.

For the reasons above given, the attempt to remove the cause of the obstruction, by opening peritoneal cavity, will almost universally fail; and the only alternative is the attempt to form an artificial anus, a procedure likewise difficult, dangerous, it may be, inefficacious for prolongation of life, and not unfrequently leading to a condition for which death would be a preferable exchange.

Pain, tumour, hardness, dulness, or clearness, by percussion, I can conceive, may sometimes guide to the seat of the obstruction, but they did not in the least in the case just narrated, nor have they, excepting very vaguely, in any instance I have witnessed. In the absence of any special guides, I suppose the only forlorn hope we could confer, would be, to enter abdomen in the linea alba, or in the iliac region as practised by Littre, and open a portion of distended intestine, in which state only it is presumed to be when above the obstruction, though this opinion is open to doubt.

I will just add, that the operation undertaken with the view of seeking the obstruction, and the other for formation of artificial anus, are convertible; if the one fails, the other can be practised.

Case 29.—The following case, exemplifying many of above statements, was treated by me in the Infirmary:—

A man suffering, and who had frequently suffered, from obstructed bowels, was admitted by Dr. Ritchie, who for eight or ten days—I write from memory—employed, most judiciously and energetically, all medical, and, short of the knife, all mechanical measures proper in such circumstances. The patient was shown at a consultation, and an operation for formation of artificial anus being all but unanimously recommended, he was transferred to my wards.

Some of the consultants advised Littre's, others Callisen's operation.

In truth, there was no good direction to the seat of obstruction; but from some fulness and clearness of percussion in site of transverse colon, and inability to pass into it (most fallacious supposition) a flexible tube, it was inferred as the locality of the obstruction, and a modification of Callisen's preferred to Littre's operation.

I need not detail the minutiæ of the operation, which was easily executed. A crucial incision was made in right lumbar region, and a portion of intestine arrived at, uncovered by peritoneum, attached to, and not floating in, abdominal cavity.

This was opened, and there escaped much flatus, and some fæces.

Some relief followed, and in two or three days copious fæcal discharges occurred, and patient greatly improved.

So much did he improve, that, contrary to express instruction, he ate largely, when all the symptoms returned, and, in opposition to a variety of treatment, he died six days after the operation.

The morbid appearances were found closely allied to those of the previous case. The seat of the obstruction was similar; but, as you will perceive in the preparation,* in place of a recent and adventitious band, there is here, apparently a congenital malformation, a portion of mesentery passing across and above termination of ileum, twisting and compressing it, and, when bowels were distended, rendering it so tense as almost completely to interrupt continuity of canal.

The small intestines were enormously distended, the large, empty, and contracted wound had penetrated colon, without entering peritoneum, about three or four inches above ileo-cœcal valve.

The death of this patient was neither caused nor hastened by the operation; it was rather retarded by the free evacuations which passed through wound a few days after operation. And had the patient, as advised, confined himself to scanty fare, continuity of the canal would likely have persisted. But he was so much relieved that he ate largely, again distended the intestines, pushed them against the stretched and tense portion of abnormal mesentery, and again produced obstruction.

Nevertheless, the operation may be called a failure. The opening in the bowel was below, in place of above, the obstructing cause, and the temporary relief was casual. Our main guidance to the part of the bowel to be entered, was on the greater distention and clearness on percussion of what was taken for the colon.

But, I fear, little dependence can be placed on these signs; as fulness and clearness, occasioned by the distention above the seat of obstruction, will generally mask or conceal the condition of the canal below it, by producing a diffused and universal tympanitis.

Callisen's operation having failed, Littre's was proposed, which would not have confined us to a single portion of bowel. But the uncertainty of diagnosis, and aversion of the patient, prevented its being urged.

So far as a single case can, this one goes far to establish the difficulty of diagnosis, as to the locality and kind of morbid states, producing obstruction of bowels, and uncertainty of the success of any operation for their relief or removal.

---

* Preparation was shown when the paper was read to the Medico-Chirurgical Society of this city.

True, if the cause be simply functional, as inaction or paralysis from distention, or interrupted nervous energy, art or nature may relieve; invagination may subside; distention or peristaltic action may withdraw a strangulated portion of intestine from its stricturing parts; an adventitious band may lacerate; contiguous portions of bowel may adhere, ulcerate, and communicate, thus restoring continuity of canal; or, from a concurrence of favourable contingencies, the viscera may resume their situations and functions, as must have happened to the patient in all but his fatal seizure. But patients seldom survive long enough for completion of most of those terminations: a fatal issue is therefore certain unless arrested by art; and all medical measures being exhausted, and as much time given to natural resources as can safely be afforded, the patient is entitled to the forlorn hope of the operation for formation of artificial anus, the situation for which must be determined by the specialties of each case, and the skill and judgment of the practitioner.

II. *Cases of Retention of Urine, with Remarks.* By JAMES WATSON, M.D.

RETENTION of urine from partial paralysis of the bladder, whether with or without the complication of diseased prostate, is amongst the many indications of approaching old age, and of these it is often one of the most unpleasant. The cause of this state is generally obscure, but not unfrequently it can be traced to some unusual resistance to the call to void urine from unavoidable restraint. In whatever way induced, however, when once the bladder has lost the power of thoroughly evacuating its contents, the inability is apt to increase, till it results in excessive dilatation, as manifested by the prodigious quantity of urine which often escapes on the introduction of a catheter. The well-known circumstance of the capacity of the bladder admitting of such permanent increase without much positive suffering, and the considerable, though short-lived, relief which, till the disease is far advanced, is obtained from the partial evacuations of urine, which the patient, though with difficulty, is able to accomplish, give occasion to a very dangerous blindness on his part to the risk he is encountering, and often prevent him from applying to the surgeon till irremediable mischief to the urinary apparatus has taken place. Serious affections occurring in this manner are by no means rare; but they are always interesting from the variety of phases they exhibit, and their very intractable character. Perhaps no apology, therefore, is required for my bringing forward a few select cases, as they occurred in my own practice, and making them the groundwork of a few practical remarks.

Case 1st.—M. W., a healthy, vigorous gentleman about 60, had long observed that his calls to void urine were too frequent, while the quantity evacuated was generally small. He connected this ailment with having some years back retained his urine, on one occasion, for a very unusual length of time. He mentioned these circumstances to me, when visiting his family for some other reason, fully two years before his death. I explained the likely cause of his symptoms, and recommended the occasional use of a catheter. He was at this time otherwise in good health, and thought the remedy severe for all he was suffering; and as he lived in the country, and I only occasionally saw him, I forgot the circumstance, and my recommendation was not attended to.

Fifteen or eighteen months after this, a considerable increase of discomfort forced him to have recourse to the catheter; but by this time he was thin and looking ill, his urine had become occasionally turbid from small floating flakes of mucus, and there were some slight fugitive occurrences of œdema, giving reason to fear his kidneys were getting affected. The introduction of the catheter contributed much to his comfort, and, under the treatment otherwise prescribed, the œdema disappeared, and his health improved. The catheter was then laid aside. In other two or three months, however, his urinary ailments became again greatly aggravated. The hypogastrium felt rather full, and was always uncomfortable, the spontaneous voiding of urine giving little relief. The urine itself was much loaded with viscid mucus, contained albumen, and was ammoniacal. In addition, he became irritable and feverish. Little could now be expected from the catheter, yet it was found necessary from time to time to introduce it, as the bladder had become very impatient of distention. Along with the occurrence of these local symptoms, the patient's general health gave way; and after being confined to the house, and chiefly to his bed, for about four months, he died worn out.

Many remedies were tried in this case, and with varied, but only temporary benefit. Leeching and blistering over the hypogastrium and perineum—opium in all forms and modes—acids with steel and without—pareira brava—buchu leaves and sarsaparilla — were among the remedies resorted to. Solution of nitrate of silver was also injected into the bladder with no apparent effect; but it was used late in the disease, when the bladder, and probably the kidneys, were disorganized, and therefore had no fair trial.

This last remedy was used at the suggestion of my friend Dr. Hislop of Govan, who chiefly had the charge of the patient during the last four months of his life, and was indefatigable in his exertions to alleviate his sufferings. After death, Dr. Hislop was permitted to look at the bladder, but very hurriedly, no regular inspection having been permitted. The whole coats of the bladder were found much thickened. The mucous lining was very dark in colour, abraded in some points, and traversed extensively by enlarged veins, containing very dark-coloured blood. The prostate was somewhat enlarged. The kidneys were not examined.

This may be regarded as a pretty fair type of the class of chronic inflammation of the bladder,—the result of partial paralysis of that viscus, uninterfered with by the use of the catheter. In the two following cases the catheter was used long, and with advantage. I bring them forward partly as a set-off to case first, where the catheter was used late in the disease, but also because they each possess a point or two of peculiar interest.

Case 2d.—M. G., a hale, stout farmer about 55 years of age, in comfortable circumstances, and, on the whole, a sober man, complained of an increasing frequency in calls to void urine, with painful straining, and a small discharge. The use of liquor, which he sometimes indulged in, always increased his discomfort. He called on me during one of his exacerbations. The catheter withdrew a considerable quantity of normal urine, with great relief, after his having ineffectually endeavoured to empty his bladder by his own efforts. For some time he called occasionally to get the catheter introduced; but the bladder did not seem to recover its expulsive power, and, as he lived at an inconvenient distance in the country, I advised him to procure a silver catheter for himself, which he did, and used it regularly for ten or fifteen years, viz. during the remainder of his life.

During the greater part of this long period he was, generally speaking, very comfortable, and in good health; but occasionally, notwithstanding the regular use of the catheter, the bladder was irritable and uneasy. The urine, on these occasions, was loaded with mucus, and more or less alkaline. He also now complained frequently of pain in the urethra, stretching towards the point. At these times he was also feverish. A warm bath, purgatives, and cooling diureties, relieved these attacks, and he went on again as usual. These exacerbations were generally traceable to some slight excess in liquor, or exposure to extra fatigue or cold; but the symptoms were, at times, so like those from the irritation of a stone, that he was more than once sounded by myself and other practitioners, who were consulted on his case, but without any calculus being detected; and we all concluded that an attack of acute inflammation of the mucous membrane caused these anomalous symptoms.

These attacks became latterly more frequent, and the bladder did not recover as formerly in the interval. The ropy mucus and alkaline state of the urine became more constantly present. The patient got thin, feverish, irritable in the bowels, and finally died, after two or three months' confinement. The usual remedies were tried ineffectually. Opium alone gave much relief.

Inspection.—The bladder seemed the only seat of disease. All its coats were thickened, and the mucous lining in the usual state in such cases. But the remarkable circumstance was the presence of a calculus in the bladder in a very peculiar situation. This calculus was of an oblong shape, about 1¼ by ¾ of an inch in its two diameters, of rather light specific gravity, consisting externally, and to some depth, of a softish calculous matter, apparently in the process of solidification, but internally of a firmer deposit, more nearly approaching the character of an ordinary calculus of the mixed phosphatic kind. Its position was certainly very strange. It lay across and above the entrance of the urethra. It was glued slightly by the soft calculous matter, of which it was externally composed, to the mucous membrane of the bladder; but it seemed as if it were chiefly held *in situ* by the parietes of the thickened bladder pressing somewhat on the extremities of its long axis. There was nothing like a cyst enveloping it. Across the lower, and, to a small extent, the posterior surface of its body, about its middle, there was a most distinct, though somewhat superficial, groove, obviously occasioned by the friction of the catheter in its frequent passage into the bladder. This groove, which was very smooth, was imprinted on about one-fourth of the circumference of the calculus. I had the pleasure of exhibiting this calculus, with a history of it similar to the above, to the Medico-Chirurgical Society of this city at their meeting on the 8th September, 1846.

Case 3d.—In another case, also that of a very healthy and vigorous man for his age, about 70, resident in Glasgow, the catheter had been used, by himself, regularly for a great many years, at least twelve, but with so little attendant inconvenience, that, although the ordinary surgeon of the family, I had not known he was in the habit of using it. One day, however, after exposure to cold and wet, he became feverish, and suddenly very feeble. I now, for the first time, introduced the catheter. The urine was much loaded with mucus, and speedily became alkaline. He complained much of hypogastric pain, not relieved by the removal of the urine, and the bladder was felt forming a hard tumour through the parietes of the abdomen. He died after a very few days' illness, not above three or four. There was no hæmaturia. This person was treated actively, considering his time of life. He was bled, leeched, and blistered, had warm baths, opium, with and without calomel, &c. No inspection was permitted.

Case 4th.—The following case is one which I am enabled to give more in detail. I took very accurate notes of it at the time, and the body was so far carefully examined after death. There are circumstances, however, connected with many private cases which prevent a very complete autopsy from being obtained,—such as burial at a distance, &c., and this was the case here. This will explain why some important organs were not so carefully examined as could have been wished. In fact, the body was only permitted to be inspected in a very hurried manner.

On the 17th of July, 1846, I was requested to visit a country clergyman temporarily resident in Glasgow. He had been in Edinburgh the day before, consulting an eminent practitioner there, for what the patient thought was ascites. He had been speedily relieved, however, of this supposed ailment by the introduction of the catheter, by means of which, the patient asserted, a whole chamber potful of urine had been at once drawn off. He was directed to get this repeated daily, till the bladder should recover its tone, which was confidently expected, as the clergyman, though very hypochondriacal, was of middle age, and apparently otherwise in good health. It was in consequence of this recommendation that I had been sent for. No urine had been passed since being in Edinburgh, and the patient felt very uncomfortable.

The catheter was introduced with the most perfect ease, and fully three English pints of natural looking urine were withdrawn. In the evening I again withdrew a full quantity of urine also quite natural. It might perhaps have had a slightly pinkish hue, but at the time I thought nothing of it. I left the catheter, a silver one, with the patient, intending to introduce it again in the morning, but was prevented by a midwifery case from calling till fully midday. He had got impatient, however, and had endeavoured to introduce the catheter himself. He said he used no force, but had got agitated, and thought he might have hurt himself. He only withdrew a small quantity of urine, which was very bloody. I immediately introduced the catheter, and again in the evening with the same ease as formerly, and each time removed a moderate quantity of urine, say ten to twelve ounces. On both occasions, it was of a very dark blood-red colour, but there were no clots. My patient did not perhaps feel the same perfect relief as formerly, but made no other complaint. At the time, I thought he might have injured the prostate, thus occasioning the hæmorrhage. I recommended rest, mild diet, and strict attention to his bowels. I introduced the catheter myself with great gentleness and care morning and evening; and as he complained of no pain, and was otherwise in good general health, I trusted the hæmaturia would soon disappear.

Two days passed in this way without change in the urine, or otherwise any new symptom, till the morning of the 20th, when I was informed he had been seized suddenly about midnight with such acute spasmodic pain in the region of the bladder, as to make him literally scream out. This pain had returned at intervals, though less severely, during the night; but, having been always relieved by warm fomentations, I had not been sent for. I found him still suffering occasionally, though less severely, from the spasms, and pressure over the hypogastrium gave him some uneasiness. This region was a little full, but no hard tumour could be felt, and the abdomen was otherwise soft, and without pain. Pulse 112.—Skin warm—no sickness or headache. Had an easy stool during the night. Urine, when drawn off, was very dark, and not abundant. The catheter was easily introduced, but he complained of the instrument exciting pain in the bladder, especially as it became empty. He was much agitated and desponding.

Twenty-four leeches were applied over the lower part of abdomen, followed by fomentations. A full opiate enema was administered, and shortly thereafter a dose of castor oil, after the operation of which the enema was repeated. By this treatment he was speedily greatly relieved, and the pulse reduced; but the urine remained unchanged. Next day he seemed still further improved—the pulse is noted as being nearly natural. The urine, however, was still red; and the patient's mind being much agitated on that account, two grains of Gallic acid, with half a grain of opium, were ordered every six hours. He took two of these, but, during the night, the spasmodic pain returned, accompanied with severe tenesmus. Next morning, the 22d, the pulse was pretty calm, and the abdomen free from general tenderness; but the least accumulation of urine occasioned much uneasiness, and, when drawn off, it was not only dark in colour, but deposited a mucous sediment. Gallic acid was omitted. Laudanum was exhibited by mouth and per anum, and water, acidulated with muriatic acid, was ordered for drink, and the catheter was introduced every six hours.

23.—Pain less urgent, but urine more loaded with mucus, and ammoniacal; remedies continued, and blister applied over lower part of abdomen.

24.—Somewhat as yesterday, but pulse quicker and feebler; urine not so dark in colour, but otherwise more unnatural.

25.—Pain less, but otherwise worse. Looking ill and restless. About midday, he became somewhat incoherent. By the evening, he was sometimes very violent and unmanageable; at others, apparently unconscious. He continued in this state, notwithstanding the use of such means as his symptoms indicated, till the evening of the 26th, when he died comatose,—six days after the first accession of the spasms, and eight after the occurrence of the hæmaturia.

The body was examined twenty-four hours after death. The abdomen appeared much swollen, but this was partly occasioned by the superficial fat, which was of considerable thickness, and by the intestines being much distended with flatus. There was no inflammatory or other effusion into the cavity of the abdomen, and the peritoneum, even where reflected over the bladder, was free of any lymphatic exudation. The solid abdominal viscera, including the kidneys, seemed normal, but were not cut into. The bladder was removed for more careful examination. It was much thickened, especially its mucous coat, which was corrugated, somewhat flocculent on its internal surface, and of a deep purple colour. There were here and there small patches of lymph adhering pretty firmly, and covering slightly ulcerated points. A number of enlarged and hardened veins ramified in the submucous tissue. The capacity of the bladder was small, compared with what it must have been a few days before, apparently incapable of containing above six or eight ounces of fluid. The contained urine was of the same dark red appearance as during life. There were no clots, but much glairy matter of a very fetid ammoniacal odour. There was no calculus nor calculous matter within the bladder, although the patient during life had a strong persuasion that he had a stone.

The prostate was about the natural size, and seemed to have been uninjured by the catheter. The vesical extremities of the ureters were dilated, their mucous membrane somewhat thickened, and of a deep red colour. The head was not opened, and the viscera of the thorax were looked at hurriedly. They seemed normal.

These cases raise some very important practical questions.

1. Should the catheter be recommended early, in affections such as case first? This query I would answer decidedly in the affirmative. I am persuaded had the catheter in that instance been more urgently recommended, and the recommendation attended to, the fatal issue might have been prevented, or at least considerably postponed. No doubt the mode of treatment is an unpleasant one; and it may be difficult to persuade a patient, who fancies he is merely labouring under an ailment temporarily troublesome indeed, but little connected with danger, that he requires to submit to such a remedy, and even perhaps to continue its use for life.

But the evils to be warded off are of a nature by much too serious to be encountered, from a deference to the prejudices or feelings of the patient. Nor ought the surgeon to have his own convictions shaken, as to the propriety of the recommendation, by having occasionally witnessed severe vesical irritation, or even fatal accidents occurring after the introduction of the catheter. These will sometimes happen from unusual constitutional or local irritability, from the introduction of the catheter perhaps having been too long delayed, or from other causes more or less evident; but such casualties are comparatively rare, while the state of things in question never stands still, but uniformly progresses in some such manner as illustrated by the first case. From all that I have seen in reference to such cases, I am persuaded it is the surgeon's duty, where a person past middle life applies for advice, with frequent micturition, and a small discharge of urine, to suspect a bladder unable to evacuate its contents, and urgently to recommend the catheter.

At the same time, it must be well remembered, that in cases where the catheter is frequently used, though with the greatest prudence and caution, there is always present a proneness in the bladder to take on inflammation of its mucous coat, more or less acute, from very trifling causes, as errors in diet and exposure to cold. We ought therefore to warn such patients to be most circumspect in their general conduct; and the more especially if they are in the way of using the catheter themselves, as such people are very apt to get reckless and confident of their safety. Excess of all kinds must be strictly forbidden, as well as exposure to a chilling or damp atmosphere. The clothing should be comfortable, the diet good, with the very moderate use of liquors, and great care taken not to allow any engagement to interfere with the usual time of introducing the catheter, as slight extra distention might produce serious consequences.

2. Should the urine, in cases of lengthened retention, be altogether drawn off at once, or should the bladder be at first partially, and only after some delay, be more fully evacuated? The fourth case brings this question very strikingly before us, and, so far as it goes, seems to favour partial evacuation. On the 16th and 17th July, the bladder was fully evacuated at once; on the 18th, hæmaturia occurred; and on the 20th, early in the morning, the acute symptoms set in, which ended shortly in death,—nothing having occurred in the interval to account for all this, excepting the patient's extreme anxiety and agitation, especially after the occurrence of the hæmaturia, he being an exceedingly nervous and excitable person. It would be well, therefore, where the distention may have been very great, as in this case, to act on the plan of partial evacuation.

I am not prepared, however, to assert, from the result of this one case, nor from my own experience otherwise, that this rule should be regarded as imperative. I am aware that we have all often been compelled by circumstances to withdraw at once large quantities of urine, both from males and females, without any evil effects following; and I believe that, in the country where the inconveniences of such partial evacuation must be found very great, practitioners hardly ever attempt it, being too happy at once to effect the complete relief of their patients. Moreover, many might demur to the propriety of either leaving a catheter in the bladder, in such circumstances, (probably a silver one is the only one at hand), or of reintroducing it within a very limited period; while others might urge, and with good reason, that the risk of the bladder sustaining injury from sudden or nearly complete collapse is not great, seeing there is always much remaining resiliency in its coats, however they may have been over-distended prior to evacuation, and that it will certainly be speedily redistended, to some extent, by the rapid influx of fluids from the gorged ureters and congested kidneys. Much yet remains to be ascertained as to the real causes of these severe attacks of cystitis, occasionally following the use of the catheter; and it would be well if a few such cases as the present were fully recorded, that, by a comparison of facts, we might perhaps arrive at some surer guides in our procedure than vague analogies, or the dread of consequences, which, however apparently reasonable, may admit of other explanations.

3. The occurrence of the hæmaturia in case fourth is a circumstance worthy of special notice. I do not recollect of this having ever happened in my experience before, excepting in connexion with some chronic disease of the urinary apparatus; and this circumstance, together with its occurring after an incautious use of the catheter, and there being at first no accompanying pain or febrile excitement, made me hope it would have speedily disappeared. I am now persuaded that it formed a very important feature of this poor gentleman's disease—that it resulted from a very universal congestion of the capillaries of the mucous membrane, probably induced by its very rapid relaxation after such great distention as it had been subjected to; and though its appearance preceded the more prominent symptoms of acute cystitis by 48 hours, yet that it was a very decided indication of the approach of that severe affection, and deserved more attention than at the time was thought necessary or prudent.

4. The two last cases suggest the great and imminent danger connected with acute affections of the urinary bladder, and the risk of our being thrown off our guard by the apparently local nature of the ailment, and the moderation of the general symptoms. In both instances the fatal termination was very sudden, and the issue was especially striking in the latter, where the patient was a stout person, of middle age, and the symptoms at first not such as to excite great alarm. It would be well, therefore, in treating such affections, to bear in mind that they are apt to progress in a covert manner, to become suddenly aggravated without obvious cause, and even to assume some new and more dangerous phase, not to be anticipated from the previous symptoms. Of such sudden aggravations or change of phase, the latter was an example; indeed, from the hardened veins in the bladder, and the peculiar nervous symptoms occurring during the last two days of his life, I was of opinion that my patient had died of phlebitis. But however this may be, it is clear that the physician ought to entertain a salutary dread of such accidents occurring, and to continue unremitting his vigilance, till every doubtful symptom has been for some time removed.

5. I have nothing new to propose as to treatment. In such acute cases as the two latter, probably any plan would be ineffectual. Immediate and active treatment was carried fully out in case third, and failed in arresting the disease, and a similar result followed the more moderate measures pursued in case fourth. Still, however, there is no choice left, and antiphlogistic measures must be had recourse to, and pushed as far as circumstances seem

to require or admit. Opium, also, on account of the painful nature of the affection, and the great restlessness and irritability of mind and body accompanying it, is peculiarly indicated.

When the disease has put on a more chronic form, there is more time to consider what ought to be done, and a great many things have been recommended, all supposed to be more or less useful. In my time, I have tried nearly all of them, and sometimes thought with temporary good effect; but all have failed in my hands in arresting the disease, excepting in very moderate cases indeed. Next to attentive regulation of the bowels, and opium in its various forms and modes of administration, I have thought the decoction of pareira brava, according to Sir B. Brodie's recommendation, did most good. Buchu, uva ursi, and balsam of copaiba, I have found still more uncertain. Leeching and blistering the hypogastrium and perineum, I have found useful when there was much local pain. But of all other plans of treatment, hitherto proposed, I am inclined to think most favourably of the direct application of stimulating substances to the mucous membrane of the bladder, in many modifications of such affections as we have been considering; and to anticipate much benefit from their use, if had recourse to before the tissues are diseased beyond recovery.

This opinion, however, is not given from my own experience, for I cannot be said to have personally made trial of the plan: but it is founded on the acknowledged benefit derived from local stimulation in many inflammatory states of the mucous membrane in other organs, and on the favourable opinions expressed by Sir B. Brodie,* Dr. O'Brien,† and other practitioners, of the results of such treatment in their hands. Like many others, I long entertained a prejudice against the introduction of such substances into the bladder, as being certain to give much annoyance by the necessary manipulation, and likely to excite dangerous irritations in the coats of that viscus, such as the patients, worn out by a tedious and painful disease, and disappointed by the failure of the many remedies previously prescribed, could be little expected to bear. The more, however, I reflect on the subject, the more I am convinced that, in place of wasting time with remedies which, however high their character, are, in all likelihood, quite powerless for good in most instances, the proper treatment, in cases where there is considerable mucous discharge with frequent micturition, is to proceed at once to inject a solution of nitrate of silver, of a strength somewhere between five and ten grains to the ounce of distilled water, having previously washed out the diseased mucus as directed by Sir B. Brodie, and to repeat the process according to circumstances.

---

* Lectures on Diseases of Urinary Organs, by Sir B. C. Brodie, page 110.

† Paper on the application of Solid Nitrate of Silver in Chronic Cystitis, by Dr. O'Brien. Dublin Journal of Medical Science, vol. xiv. page 62.

III. *Case of Obstructed Labour.* By DANIEL R. RANKIN, Esq., Surgeon, Carluke. Read before the Medico-Chirurgical Society, on 13th September 1853, by JAMES WILSON, M.D.; with his *Remarks.*

UPWARDS of three years ago, I presented to this Society a short notice of several successive labours, under remarkable circumstances. The termination of another pregnancy in the same individual, not less remarkable than any of the previous, induces me to submit to you the more important details from the notes of Mr. Rankin.

It may be recollected that Mrs. Gracie, at 24 years of age, after having had two children without any unusual event occurring, experienced, at the delivery of her third child, (24th August, 1846), some difficulty. Her fourth labour (31st March, 1848) was effected by craniotomy—not without very great difficulty, from the pre-occupancy of the pelvis by a large tumour, which, on the one hand, was an insuperable hindrance to the descent of the hand, and, on the other, a source of impediment to the use of instruments.

A subsequent pregnancy, with these antecedents, naturally excited anxiety. On 26th February, 1850, Mrs. G. was delivered by turning the child, the body of which, acting so as to displace the obstructing parts from the pelvis into the abdomen, and, as the sequel proved, to destroy the vitality of the tumour, which was expelled from the system 38 days after. This was the case, the particulars of which were formerly communicated.

Pregnancy again occurring, new anxiety arose. Mrs. G., on the 5th of November, 1852, became a widow. At this time a dread existed that she might be pregnant, and that, if such was the case, four months of the period of gestation had expired; but of this there can be no certainty.

On the 12th of January, 1853, she was seized with pains, the character of which induced a belief that she was in labour. On the 2d of February a similar attack came on, and, on this occasion, Mr. Rankin had an opportunity of examining the patient. The pains occurred at intervals, as in ordinary cases, and were of a severely "bearing down" description; but, on examination, all the usual concomitants of approaching delivery were wanting. The vagina, which was much elongated, admitted of free exploration, and it was easy to determine that the cavity of the pelvis was unoccupied by any morbid substance of an obstructing kind. During the severest convulsive effort, the parts within the reach of the fingers were in no way affected by the pains.

The abdomen at this time presented a singular aspect. In the right hypogastric region a tumour, with well-defined superior and anterior borders, resting apparently within the ilium, reached to the umbilicus, and to the pubis, which during a pain became tense, but in the intervals felt firm, though somewhat fluctuating. On the opposite side, extending to about a hand-breadth above the left ilium, another tumour of oblong form existed, which was firm and unyielding. Higher up, a third tumour (the uterus) was felt, less in size than the tumour in the right hypogastrium. These tumours had distinct bearings: that on the right side was the most superficial, and overlay to some extent the anterior border of that on the left side, while the lower part of the uterus passed behind both. It is probable that, throughout the whole period of gestation, these relative positions were maintained; but it is certain that such was the case during the latter five months.

On the 13th of March, 15th of May, and 12th of June, Mrs. G. had seizures in all respects similar to those of January and February, which continued on each occasion from 8 to 17 hours.

On the 17th of March, I saw the patient with Professor Rainy, and on the 16th of May with Professor Buchanan. The case had many peculiarities, and was one of difficult prognosis.

On the 22d of June, early in the morning, the same description of pains came on; and at 5 A.M., during one of the severest, something was felt to give way, and immediately a considerable discharge of bloody fluid escaped by the vagina, and continued to flow all day, the pains being less urgent till 1 o'clock of the following morning. At this time, and up till 7 A.M., everything was obscure, as in former illnesses: there was no presentation, the uterus was situated high in the abdomen, and, during the pains, there was no favourable action or sympathy of parts within the pelvis.

Up to this time the narrative of the case is given by Dr. Rankin, who then left the patient under the care of Dr. Selkirk, who, along with Dr. Rankin, had taken a praiseworthy interest in all her various difficulties. Dr. Rankin came to Glasgow for me, and, on our arrival at Carluke, we had the concluding narrative of the case from Dr. Selkirk in the following note:—

"11 *o'Clock.*

"Dr. Rankin, Carluke.

"My Dear Sir,—Mrs. Gracie was delivered of a fine healthy child about an hour ago. On examination, at 8 o'clock, I was enabled to reach the presenting part—the head—with the tips of the fore and middle fingers. The head being placed *between* the tumours, and naturally in the axis of the pelvis, I deemed the space sufficient to allow of its being squeezed through. I was not disappointed: during several powerful efforts I kept a steady pressure upwards upon the *left* tumour—the head immediately descended, and was forthwith expelled.

"The discharge of fluid since yesterday morning, I am of opinion, is referrible to the tumour of the right side,—as, 1st, It was to the touch evidently lessened; and, 2d, *I discharged the liquor amnii* (*about* 9 *o'clock*) so soon as I deemed the parts sufficiently dilated to admit of the passage of the child.—I am, my dear Sir, most truly yours, "A. C. SELKIRK."

About two hours after the delivery, I saw the patient, who was remarkably well. I examined the state of the tumours. That on the right side, which had been the most prominent, was broken up, and evacuated to a considerable extent, while the left remained entire. The child was quite healthy, and of average size; but there was nothing in its appearance to favour the opinion that gestation had been prolonged beyond the usual period.

I believe the tumours in this case to be ovarian; and the one on the right side, which gave way, would appear to have consisted of one or more cysts, or perhaps hydatids, produced from the remains of the former tumour, a great portion of which was discharged through an opening in the upper part of the vagina, 38 days after the former delivery. It is probable that the fluid, after the rupture in the present instance, made its escape through a small opening in the old cicatrix, with which the cyst was most likely connected. For proof of this, Dr. Rankin writes me a few days ago, "The upper part of the vagina is indurated, and some tenderness exists." He further adds, "Mrs. Gracie is wonderfully well. For some time she could not maintain the erect position: this is now restored. In stooping now, she has to put the left leg out behind her, the tumour on that side hindering free motion forward."

Had this case remained in the same state as it was, when Dr. Rankin last examined at 7 o'clock, I was prepared to recommend the following modes of treatment:—

1st, To endeavour to pass the hand by the sides of the tumours, as in the former labour, and deliver by turning; 2dly, Had that been impossible, I would have taken my chance of the contents of the tumours being fluid, or of such a character as to escape by a perforation. I have done this before, and brought the child through the pelvis, which otherwise could not pass, and I have recommended the same plan in other cases; and, 3dly, Failing this, we would have resorted to the cæsarian section.

This case is most instructive. The two former deliveries of the patient were complicated by the existence of a large movable tumour, occupying the pelvis. In the present case, the uterus rested, so to speak, on tumours strictly abdominal, the removal of which was indispensable, in order that the contents of the uterus might reach the pelvis, or the hand of an operator reach the uterus; and, consequently, great difficulty was felt regarding what might be necessary to secure delivery. But Nature, the great conservator, seldom failing, came to the rescue. The obstacle in which we foresaw difficulty and danger was safely removed by rupture and evacuation of its contents, thereby affording space for the passage of the child.

The result of this and the former case, impresses me strongly with the propriety of puncturing these obstructing tumours from the vagina. Dr. Merriman has collected 18 such cases,—one-half of the mothers died. He adds, after giving a detail of the cases—"Upon the whole, the evidence we at present possess, is more in favour of opening tumours, when they contain fluid, than of any other mode of procedure; for, of the nine women who recovered, more or less perfectly, five appear to owe their safety to this operation.

"Dr. Murphy says, if the tumour can neither be pushed back towards the brim of the pelvis, nor pressed against the sides of the pelvis, the only resource left is to puncture the tumour, and allow the fluid to escape. This may be done, although there be no distinct sense of fluctuation, because the fluid is often thick, like honey, and may be deeply seated, which will communicate to the fingers an elastic feel, rather than that of fluctuation. Besides, if a mistake be made, and you should puncture a polypus or fibrous tumour, no great injury is done."

Mr. Arnott, in his Clinical Lectures on Surgery, gives the case of a Mary Gray, where he punctured a tumour of this kind; it was solid: inflammation and suppuration were induced, and, on the twenty-first day after the puncture, a large mass was thrown off by the same opening; and in the same way in which the tumour was passed in Mrs. Gracie's case, 38 days after her former confinement. The recovery in Mary Gray's case was perfect.

In many of the recorded cases of obstructing tumours, the fatal results might, in my opinion, have been prevented had the tumours been timeously punctured, instead of the child's head, which seems the favourite practice with some practitioners.

IV. *An Instance of Cancerous Disease of the Pituitary Gland, as exemplified in the Case of the late Dr. James Orr of Dunoon.* By Robert Scott Orr, M.D., Dunoon, formerly Resident Superintendent of the Glasgow Royal Infirmary.

On Monday the 7th of March, 1853, Dr. James Orr of Dunoon, after visiting a patient residing at the Kirn, which is about a mile along the shore to the east of Dunoon, walked rather hurriedly home to his own house, and, being over-heated and tired, he sat down in his easy chair and fell asleep. He did not observe, till after he awoke, that the window at his back was partly open. On awaking, he complained of stiffness in the left hip, accompanied with considerable pain, which gradually but steadily increased.

He went to bed, applied warm fomentations, and took a large opiate. After a restless night, he found next day the pain still very great, and accordingly applied twenty leeches to the painful part: the leeches bled freely, but gave no relief—the pain still continued excruciating.

On the evening of the 9th, two days after the first symptoms, he sent for me, thinking it might be necessary to resort to venesection. I found him in great agony: the seat of the pain corresponded exactly with the course of the left sciatic nerve, and extended over a space about five inches in length. There was no tumefaction or redness, but great tenderness on pressure, and he was in a profuse perspiration. Pulse about 80, regular, and free from excitement; he never had a rigor, nor was the pain of a shooting character. Judging from the symptoms and their history, I thought the pain was connected with the nerve or its sheath; and, from his habit of body, I refused to bleed from the arm, but consented, at his own urgent request, to the application of ten more leeches, and advised warm fomentations of flannel wrung out of hot water and laudanum, to be constantly applied.

Next day there was but little improvement, and, it being evident that something serious was wrong, I felt anxious to divide the responsibility of the case, and proposed to Dr. Orr to see some one else. At his own request, I wrote for Dr. Spiers and Dr. Mackie of Greenock, who both came over on the following day (the 11th), and continued, throughout his protracted illness, to see him almost weekly. On careful examination, these gentlemen agreed with me in thinking the pain neuralgic, or perhaps the effect of inflammation of the sheath of the nerve, but still we all thought there was something different about it from any case of simple sciatica any of us had ever seen or treated before. It should have been mentioned that, in consequence of the large doses of morphia which Dr. Orr took, entirely on his own responsibility, he induced a state of narcotism, from which he was but emerging when the medical gentlemen from Greenock first saw him. Still his peculiar state struck me particularly, and I specially directed their attention to his head. We agreed to cup him from the painful part of the hip, and continue the warm applications, and, as there appeared some head tendency, all sedatives, except a drachm of the tincture of hyosciamus at bed-time, were strictly prohibited. This treatment had but little effect: the limb was now manifestly increasing in size, was becoming œdematous, and very hard over the trochanter; still there was no appearance of matter.

On the 13th, a blister was applied below the trochanter, which rose well, and the joint above that was painted over with the tincture of iodine.

On the 18th, the symptoms were most alarming. On the evening of that day he became quite incoherent, fancied he was away from his own home—he was flushed and feverish, and, when left to himself, he lapsed into a state of stupor, bordering on apoplexy. On this occasion, it was certain that this state was not induced by any narcotic medicines, as these had been most strictly kept from him. I immediately cupped him from the nape of the neck, and ordered a turpentine enema to be administered, and, along with Mr. Jackson, surgeon of this place, remained the greater part of the night with him.

Next morning (the 19th), I sent for the Greenock medical gentlemen, but, by the time they came, he was better, and free from any appearance of head complication; so much so, that they were surprised at my account of his symptoms the previous night.

A week after this, these gentlemen again saw him. By this time the whole limb had swollen very much, and the night previous to their seeing him was a very restless one. On examination of the limb, it was now evident that the whole of the posterior surface of the thigh was distended with purulent matter, which, however, was very deep seated. On consultation, it was agreed to evacuate it, which was done by Dr. Spiers at the lower third of the thigh, at its posterior part, where the matter appeared most superficial. It required a very deep incision to get at the matter, and fully two quarts of thick yellow pus were discharged.

It would be both tedious and unnecessary to go over the symptoms from day to day; suffice it to say, that this abscess continued for long to discharge, and showed no symptoms of any healing process. He had also frequent slight fits of wandering and incoherence during his illness, occurring generally in the evenings, when he would become flushed, hot and feverish, fancy he was from home, and wonder how he was in his own bed, and yet from home, and how his friends also were about him. He had always had a tendency to bronchitis, and, during this illness, he was frequently disturbed by a hard ringing cough, with little or no expectoration, and the effort to cough caused great pain in the thigh. On examining his chest, I found at first indistinct crepitation at the root and posterior part of the right lung; this afterwards gradually became more and more distinct, and extended as high as the angle of the scapula. It required the repeated application of blisters to subdue it; and, even in spite of this, it frequently returned, and I often feared it might end in a secondary purulent deposit in the lung. This, however, fortunately never took place, although the crepitation never entirely left the lung, and could be perceived only a few days previous to his death.

The next unpleasant symptom which appeared was tympanitic distention of the abdomen: this continued for some time very obstinate, but was at last subdued. In consequence of these complications, and the continual drain which was going on from the discharge of such a large quantity of matter from the abscess, great prostration of strength took place, he became quite hectic, and suffered, especially at night or when he slept, from the most profuse perspirations,—his voice became very weak, and resembled exactly the voice of a cholera patient in the collapsed stage, and it was evident that, unless the abscess could be healed, he must very soon sink under such a constant drain of matter from his system.

It was now about two months from the commencement of his illness, and a consultation having been held with Drs. Spiers and Mackie of Gourock, and Dr. Crawford of Gourock, it was resolved, as bandaging the limb had had no effect in closing the abscess, and as there was still a good deal of tenderness at the original site of the malady, and over the trochanter, to make a counter opening at that part, in case there might be any diseased or loose bone keeping up irritation, or preventing the healing process. By this means also it was hoped, that, by flexing the leg and bandaging from the knee upwards, the abscess might be induced to heal from below upwards, and any cause of irritation existing at the upper part of the thigh would be got at through the opening. An incision about three inches long was accordingly made by Dr. Spiers, and most fortunately it communicated with the cavity of the abscess at its upper part, as matter made its way through the wound. This plan had the desired effect; the abscess soon healed, and, under the use of quinine and wine, his strength began to improve, and his pulse, from being always above 100, began to fall. About this time he was seen by Dr. Rainy of Glasgow at his own request, but he made no change in the treatment. Some time after he began to complain of pain in the outer surface of the opposite thigh, and a small circumscribed swelling gradually appeared. Dr. Pagan of Glasgow happened about this time to be visiting a patient of mine, and I took him to see him. We found fluctuation present in the swelling which Dr. Pagan opened, and evacuated about a tablespoonful of matter; he required to make a very deep incision, as the matter was beneath the deep-seated fascia of the thigh. It was now hoped that all hindrances to a cure were removed, and that, as this secondary deposition of matter was but small, it would soon heal.

His symptoms now all steadily improved, the healing process went on gradually but steadily, and on the 15th of June, when seen by his medical friends from Greenock, they pronounced him that day better in every respect than he had ever before been, since the beginning of his illness; his pulse was 72, of good strength, all the bodily functions were quite natural, appetite good, tongue clean and moist, the large abscess was completely healed, and the smaller one nearly so. There was still crepitation in right lung, at back part; but, on the whole, he was so well that he might be pronounced out of danger.

On the 17th of June, however, a sudden stop was put to all our hopes regarding him. About the middle of the day he was seized with great restlessness, flushed face, and fever, accompanied with incoherence: this increased as evening advanced, gradual loss of speech, dilated pupils, and incoherent ravings, preceded the setting in of complete coma, which was rapidly taking place when seen next day (the 18th) by the medical friends from Greenock, who so regularly and faithfully visited him. Turpentine enemata, a blister to the nape of the neck, and cold to the head, with croton oil given internally, had no effect in arresting such a violent train of symptoms, which was only terminated by his death, which took place at midnight, being about 36 hours after the first appearance of these violent head symptoms.

By consent of Dr. Orr's brother, an examination of the head was permitted, and the dissection was kindly performed by Dr. Spiers, in presence of Dr. Mackie of Greenock, Dr. Crawford of Gourock, Mr. Jackson of this place, and myself.

On removing the skull-cap, it was found to be preternaturally thick; so much so, that we all remarked we had never in any case seen the calvarium so thick before; in some places it was nearly half-an-inch in thickness. The dura mater adhered very firmly to the interior of the thickened calvarium; so much so as to cause considerable difficulty in removing it. There was very considerable sub-arachnoid effusion, both of lymph and serum, evidently of recent origin. The chief disease, however, was observed in the pituitary gland. Occupying its site in the sella turcica, and beneath the clinoid processes, was a tumour the size of a large walnut. The upper surface of this diseased body was of tolerably firm consistence, and pressed closely on the tuber annulare and commissure of the optic nerves. At this part, there were attached to it several cysts, containing a reddish gelatinous-looking serum: one of these cysts was as large as a middling-sized hazel-nut, and there were three or four smaller ones dipping deep among the convolutions. The whole tumour and its appendices must have exerted very considerable pressure on the optic nerves and tuber annulare. The lower part of the tumour resting on the sella turcica consisted of soft broken down brain-like matter, of a reddish-brown colour and creamy consistence, presenting indeed to my mind all the characters of fungus hæmatodes, or soft cancer. So broken down was it, that it could not be removed entire from its site. The sella turcica underneath was found completely carious, and reduced to a soft pulp; the clinoid processes were eaten away, and the little that remained of them were sharp elongated spiculæ. Indeed, so extensive was the attenuation and destruction of the bone, that the slightest puncture entered the nasal cavity; and the probability is, that, had life been prolonged, there would soon have been a sanious discharge from the nostrils.

None of the other cavities were examined.

I cannot conclude this melancholy history of my late friend's illness, without expressing my obligations to all the medical gentlemen already named, who so kindly and efficiently assisted me in the treatment, and who divided with me the anxious and responsible duty of attending a professional brother, for so long a period, in a comparatively isolated district, and under such distressing circumstances. Nor should I omit this opportunity of testifying to our late friend's patience and resignation under such severe and protracted affliction. During a period of more than three months, he was never able to sit up in bed even for a moment, and after the first severe suffering was over, a murmur never escaped his lips. The remark has been made, that medical men generally make bad patients: there may be some truth in this, indeed it is but natural to suppose that those who possess such an intimate knowledge of disease in all its forms should, when themselves afflicted by it, become more restive and anxious than those who know nothing of disease. Such, however, was not the case in the present instance; patience and fortitude were exhibited in their fullest degree, and the most prompt obedience paid to every advice and prescription.

In reflecting on the symptoms which accompanied and characterized this very unusual case, I think it may be admitted that these are divisible into two distinct classes,—namely, those connected, either directly or indirectly, with the inflammatory affection of the thigh, and those more immediately connected with the morbid appearances found in the head, which latter, though certainly obscure, were, it appears to me, traceable, with more or less distinctness, from the time he was laid up. I shall shortly consider them under these two heads.

First, As to the nature of the complaint in the thigh. This was evidently inflammation of the deep-seated fascia, commencing in an obscure manner, and proceeding steadily to suppuration, without any rigor or throbbing. The matter was very deep-seated; and, consequently, long of making its way to the surface, and the destruction of the deep fascia must have been very extensive, as large sloughs of it were from time to time discharged through the opening made in the thigh. Nor are we at a loss for its cause: what more likely to produce such an attack than exposure to a draught of cold air from an open window while asleep, the body being in a state of perspiration from over-exertion and fatigue? The tendency to secondary purulent deposition was also, I think, very great. This manifested itself very distinctly in the small secondary abscess which formed in the opposite thigh, quite away from the original site of the disease. This smaller collection I may almost say, I was glad to see, for I often dreaded the occurrence of a similar deposition in some more vital part. I particularly feared this with regard to the lungs, from the gradual extension of the crepitus, which took place in the back part of the right lung, and which was only kept in check by the repeated application of blisters. Indeed, so completely was I impressed with the idea that there was pus circulating in the blood, that I could not divest my mind of it. The frequent unaccountable fits of incoherence he manifested, always accompanied with febrile exacerbations and drowsiness, led me to the irresistible conclusion of blood poisoning, and I often feared either the occurrence of abscess in the brain, or the supervention of some such sudden train of symptoms as those which eventually led to the fatal termination.

Two cases of disease and enlargement of the spleen, in which death took place from the presence of purulent matter in the blood, are related in the sixty-fourth volume of the *Edinburgh Medical and Surgical Journal*, the first by Dr. Craigie, and the second by Dr. J. H. Bennett of Edinburgh. Dr. Craigie's case I had an opportunity of seeing and watching, having had charge of it while his clinical clerk in the Edinburgh Infirmary. Both were remarkably similar; febrile symptoms, with headache, delirium, and other severe head symptoms setting in shortly before death; and on dissection, grumous, semifluid, imperfectly coagulated blood, with masses of purulent lymph, were found in the inferior vena cava and mesenteric veins, as well as in the veins and sinuses of the brain, which, being subjected to the microscope, were found to contain pus globules. These two cases are described as rare, and were entirely different from ordinary cases of phlebitis, no inflammation, roughness, nor thickening, being found on the internal surface of the veins, though very carefully looked for. The fatal symptoms certainly bore a strong resemblance to those of the case before us, and my only regret is, that the veins and sinuses of the brain, and their contents, were not more carefully examined with a view to determine this point.

Should this theory be rejected, however, there is yet another way of accounting for the last fatal symptoms, by supposing they were the result of inflammation of the membranes, with sub-arachnoid effusion of recent origin.

But it may be asked, Were there not morbid appearances found in the head sufficient to account for death, without resorting to the idea of blood poisoning? Certainly these lesions were extensive enough, but they were evidently of long standing, and not of themselves, in my opinion, sufficient to account for the sudden onset of the fatal symptoms, and it is to attempt an explanation of these only that the preceding remarks are ventured.

But we now come to the consideration, *secondly*, of the symptoms more immediately connected with the very unusual appearances found in the pituitary body and sphenoid bone. And here it should, in the first place, be remarked, that Dr. Orr had long laboured under obscure head symptoms. For upwards of a year, I am informed by a near relative of his own, he frequently complained of his eyes and head, and often had himself cupped from the nape of the neck, and blistered behind the ears; and in summer he suffered so much from the sun, that he wore frequently a broad-brimmed straw-hat for the purpose of keeping his head cool, and protecting his eyes from the light. The appearances revealed on dissection must have had some connexion with these symptoms; and yet it is wonderful how such destruction and disorganization of the sphenoid bone could go on so insidiously, producing so few symptoms, and that such pressure exerted on the optic nerves by the pituitary tumour, should not have impaired the sense of vision. Till the day on which Dr. Orr was laid up with the inflammatory disease in the thigh, he was quite able for all the fatigues of country practice, which in this district are not small—he was accustomed to ride often 20 or 30 miles in a day—he retained perfectly his intelligence—and his vision was not at all affected, although his eyes were weak. The first alarming head symptoms occurred three days after he was first laid up, and were attributed to the effects of narcotism. I thought so at the time, but of this I now feel very doubtful. He certainly did at first take too much morphia; and with such head disease, there can be no doubt, he would be easily affected by anodynes. Still he was frequently incoherent and drowsy during his illness, especially in the evenings, when it was certain he had not got any narcotics. This was very alarmingly the case on the 18th of March, when it was necessary to cup him, and use very active measures to rouse him from his stupor.

As to the morbid appearances themselves, such extensive destruction of the sphenoid bone could not have been anticipated, and must from its appearance have been of considerable standing. The body of the bone was quite carious, and reduced to a purulent pulp; and the clinoid processes were so thinned and attenuated by the destructive process, as to appear like elongated spiculæ. Such complete disorganization, with few, if any, symptoms to indicate it during life, was very remarkable. With regard to the nature of the pituitary tumour, as already stated, it presented all the characters of cancerous disease, and that in the advanced stage, part of it being but a broken down soft grumous pulp. Dr. Orr was about 45 years old,—an age not incompatible with the existence of cancerous disease,—of a leuco-phlegmatic temperament, and though he seemed robust and stout, it was more apparent than real.

Besides this case of pituitary disease, I have met with three others in which this peculiar body was found diseased. These cases I have related in Numbers 190 and 191 of the *Edinburgh Medical and Surgical Journal*, where also I have briefly collected all the information I could find on the subject of disease of this very obscure structure. As one of these cases illustrates well the cancerous form of diseased pituitary gland in not quite such an advanced stage as the one I have just detailed, I may perhaps be excused for shortly recapitulating the principal features of the case here. It occurred during my residence in the Glasgow Infirmary, and the appearances were accidentally discovered in the inspection-room of that Institution. The individual was a female 46 years of age, who died of debility and emaciation consequent on fever, which she had undergone four months previous to her admission into the hospital. The only head symptoms mentioned in the hospital reports of the case were, that the patient was evidently weak-minded, and that five days before her death there was some "wandering" displayed. On dissection, the substance of the brain appeared healthy, with the exception of two spots about the size of a shilling, the one occupying the anterior, and the other the posterior part of the centre of the right hemisphere, which presented the appearance of ramollissement. Occupying the sella turcica, and site of the pituitary gland, was a nodulated tumour about the size of a walnut, which appeared to be an enlargement of the gland itself. It seemed to be divided into three pretty distinct nodules, one of which was very hard and cartilaginous; the others, though hard, were so in a less degree, and the upper surface of the left one seemed undergoing a morbid change, being dark coloured, and in some places broken down. At the upper part of the tumour, there appeared what seemed to be the infundibulum very much dilated and thickened. The surface of the tumour was smooth and glistening, and of a bluish tint, and was attached to the crura cerebri and tuber annulare by numerous vessels and cellular tissue. On making a section of the tumour, it appeared composed of concentric layers enclosed in a cartilaginous cyst, which was enveloped in a covering of condensed cellular tissue. The centre consisted of soft, broken down, reddish, cheesy matter; and as the layers approached the surface, they became harder, and had a bluish gelatinous appearance.

In this case, the tumour had begun to soften and break down in its centre, and left upper surface, and was externally hard and cartilaginous, the bone also was quite sound, and had not yet become affected by the disease. I have little doubt, however, that, had life been prolonged, it would have softened and followed a course of degeneration similar to the case above related.

Rokitansky's cases are similar to those now related; he considers cancerous disease by far the most common lesion found in the pituitary body. His third case had advanced a stage beyond that of the late Dr. Orr. In that case the growth was found degenerated into a brown, chocolate-coloured fluid, contained in a neurilematous sac, which projected into the pharynx through an opening it had formed in the base of the skull, by destroying the body, and part of the greater wing of the sphenoid bone.

V. *Case of Fracture of the Cervix Femoris.* By James Morton, M.D., Fellow of the Faculty of Physicians and Surgeons of Glasgow. Read before the Medico-Chirurgical Society, October, 1853.

The age of the patient, the difficulty of the diagnosis, and the completion of the cure without perceptible shortening of the limb, are the chief circumstances which render the detail of the following case somewhat interesting.

On the 6th of May last, a youth about 16 years of age, employed in the counting-house of a grain merchant in the city, was amusing himself in the back-court, by attempting a theatrical feat, very popular with the juvenile portion of the community, that of walking upon a rolling barrel. Suddenly he lost his balance, the barrel flying from beneath him, and he fell forcibly upon his left side, experiencing instantly very considerable pain. He felt somewhat stunned by the violence of the fall, but was able to walk home with a little assistance. He remained in his lodgings for two or three days, fomenting his leg, and giving it entire rest, felt considerably better, and was again out at the counting-house on Tuesday the 10th, but walking with difficulty. When leaving in the afternoon, he attempted to reach an omnibus passing, and, in stepping off the pavement, he felt, to use his own phrase, his leg give way under him, and he fell upon his back, at the same time feeling considerable increase of pain in the left hip. He was assisted into the omnibus, and from it home, and in the evening, by request of his employer, I visited him.

I found the young man complaining of some pain over the left hip joint, where the soft parts were considerably swelled, but no ecchymosis was discernible. There was no evident shortening of the limb, either when extended, or bent to a right angle with the trunk; and on gently extending and freely rotating the limb, no crepitation could be felt. The foot was neither inverted nor everted. Increase of pain was experienced when the leg was raised and carried towards the mesial line, and over the sound thigh. The patient affirmed that his leg was broken, but, not being able readily to detect the fracture, I recommended leeches and fomentations, with perfect rest, and left under the impression that my patient was mistaken, and that he would be out in a day or two.

On the 11th, pain was much diminished, and swelling also abated. On the forenoon of the 12th, however, not feeling satisfied with the progress of the case, as the patient seemed to be controlled by it, to a much greater degree than he ought to have been by a mere bruise, I examined the part more minutely, and at length satisfied myself that the limb was shorter than its fellow by about three-fourths of an inch. Much difficulty, however, was still experienced in detecting crepitation, and it was only after carefully extending the limb, and suddenly, but gently, pushing it upwards, that crepitation could be observed; but, when felt, it was so very distinct, as to remove all doubt concerning the diagnosis. I requested my friend Dr. Parker to examine the limb, and to assist me in putting it up, when he felt similar difficulty in producing crepitation, and was equally satisfied with its distinctness when produced. Both were convinced that the neck of the left femur was fractured.

The limb was put up with a long straight splint, perineal band, and bandages, in the usual manner, the latter being tightened occasionally as required. At first, daily measurements were practised to detect and enable us to prevent shortening of the limb.

The patient complained little or none of the bandages, or even of pain in the limb or seat of fracture, and it was allowed to remain at rest, the patient lying upon a sofa matrass, till the 4th day of June, a period of 23 days. The bandages and splint were then removed, and a careful, but very gentle, examination instituted: no symptom of a solution of continuity could now be observed, and I felt satisfied that union had taken place in the seat of fracture. As a precautionary measure, the limb was again put up as before, more especially as my patient was in a few days to be removed to the country, and would be subjected to the jolting of a spring-cart for upwards of 20 miles. On the 8th, he accomplished this journey; and about ten days thereafter, I am informed that the splint was laid aside, and he moved about with the assistance of a crutch, and soon abandoned that for an ordinary walking-stick. He is now (September 1st) able to move about freely and attend to business, but has not yet quite regained his former agility, but expects to do so very soon. On the 6th of September, I called upon him for the purpose of comparing the injured with the uninjured limb, and could not make out a difference in length either by the eye in the erect and recumbent positions, or by careful comparison with a measuring-tape. The muscles and soft parts generally are more flaccid than those of the other leg.

Diagnosis.—All opinions as to the precise seat of the fracture in the above case, whether extra or intra-capsular or trochanteric, have been carefully excluded from the detail now presented to you; and, before entering upon the consideration of these points, a question naturally arises as to the time when the fracture actually occurred.

Actuated by a *prima facie* impulse, and without entering upon a minute inquiry into the circumstances of the different falls, it is very natural to refer to the latest of two accidents, as more probably the cause of the results discovered upon examination; but, in the present case, it seems to me desirable to sift the evidence, if I may be allowed to use a legal phrase. In pursuance of this, I would revert to the circumstances of the two falls, their height, and probable comparative degree of violence, and the direction in which the violence would tell upon the point of bone fractured.

In the first fall, which occurred upon the 6th, we must remember that the young man was standing upon the side of a barrel, or rather, he was attempting to walk upon it. More unsteady footing can scarcely be imagined, nor one more apt to fly rapidly from the feet; the elevation would be at the very least equal to two feet; and, when he deviated from the equilibrium, he came down violently and flat upon the left side, when, as every one knows, the great trochanter would encounter the major part of the force of the descent, while the direction must have been such as to cause it to tell powerfully upon that part of the femur between the trochanter and the acetabulum. The height at which the party was standing, and the rapidity with which his footing flew from him, would very materially increase the speed of his descent, and the violence of the blow; and, consequently, the amount of force that would impinge upon the trochanter. The circumstances attending the second fall, that upon the 10th, were very different. The lad, partially lame from the effects of the previous fall, was cautiously stepping off the pavement, and was fairly on the street, when he felt his leg give way under him, and he fell upon his back, no one accidentally jostling or pushing him down, so that he fell easily, and not upon the trochanter, but, at the same time, felt a considerable increase of pain at the hip.

After thinking over these circumstances, I have come to the conclusion that the cervix femoris was fractured by the first fall, but that the capsule was sound, or at most very slightly injured (reasons for concluding that the fracture was within the capsule will afterwards be noticed)—that the fractured surfaces were retained in apposition, and the body of the femur *in situ* by the capsule and ligaments, and that, immediately before the second fall, when the patient felt his leg give way under him, the capsule and ligaments had given way to some extent—that some degree of laceration had taken place in them, which may account for the subsequent inability to use the limb as before, and the increase of pain and swelling. Previous to this occurrence, my young friend could walk, though not freely, with the assistance of a walking-stick, but subsequently he had to be carried to his lodgings, the increase of pain and swelling entirely preventing his walking. Some may experience a difficulty in supposing that any one with a fissure in the neck of his femur can accomplish locomotion, as this young man did before his second accident, if it can be called one; but when they recall to mind the size and shape of the acetabulum, the extent and manner in which its edges are tipped with fibro-cartilage, and the number and strength of the ligaments and tendinous expansions with which it is surrounded, many circumstances may occur to their recollection as much more wonderful, and at first sight more incredible, than that a person with a fissured cervix femoris should accomplish locomotion, though imperfectly, with a stout stick applied to the outside of the injured limb. Sir A. Cooper's work on Fractures and Dislocations contains the history of a case, similar to the one now before us, in a female of the same age (16), communicated to him by Mr. Key. This girl fell upon the street, her trochanter coming violently in contact with the curbstone. She walked home without much pain or difficulty. This occurred upon Saturday, and she did not apply at the Hospital (Guy's) till the following Thursday. The limb admitted of passive motion in all directions, but abduction gave her considerable pain. The narrative thus continues—"She had perfect command over all the muscles except the rotators inwards. Her having walked both before and since her admission into the hospital gave rise to some doubts as to the existence of a fracture; and the closest examination of the trochanter and body of the femur could not detect the slightest crepitus or displacement of bone. I repeated the examination of the limb on the following day, but the result was equally unsatisfactory." She sunk under fever and general abdominal uneasiness, and died on Monday, nine days after the accident. On examination post mortem, the fracture was discovered at the root of the trochanter major, which was found to be detached from both the body and neck of the bone.

In this case, the patient walked about after an accident of much greater severity than occurred to my patient; and this fact, and the time of life, are happily the only points of resemblance. I should have stated that, in Mr. Key's case, the fractured limb appeared to be about half-an-inch longer than the sound one.

It must be very rare that a fall upon the causeway of a street, without other violence, can produce, in a young and healthy lad, a fracture of the neck of the femur; indeed, it seems to me almost impossible, and I am not aware of an example of it; whereas such an effect is by no means an improbable result of a rapid and violent fall from a height, however small, such as that already mentioned. But I may be met with the question, What matters it when the fracture occurred? I grant it is of no consequence to the treatment; but suppose a case of double assault, or of assault succeeding some other accident, it becomes then of the utmost importance to the patient that he should have a correct opinion given to him as to the actual cause of the fracture, and it is not of less moment to the reputation of the surgeon.

In regard to the seat of the osseous lesion, it is fortunate for my patient that it cannot as yet be accurately demonstrated where the precise line of fracture may have been. When the fracture was detected, however, a careful examination of the limb gave me the impression that the neck of the femur had given way within the capsule, and near to the globular head of the bone. The very slight degree of pain complained of, the total absence of flattening of the trochanter, and of constitutional disturbance, the facility with which the thigh could be flexed upon the abdomen, and the very limited amount of shortening, when it did occur, are facts in favour of the above opinion. Add to these the care required to detect the fracture, there being some difficulty in producing crepitation.

The probability of the lesion occurring in this situation will appear the greater, when we remember that anatomists affirm, that the ossification of the femur is not completed at the age of this patient; that it is only perfected at the twentieth year; and at fifteen the bone is represented, and we must suppose correctly, to consist of not fewer than five pieces, their osseous substance radiating from separate centres of ossification. From these facts, I am disposed to conclude that the part of the femur most likely to have given way, in this case, must have been the point of junction between the osseous centre, forming the head, and the one constituting the shaft and neck of the bone. At all events, in the fortunate absence of a post mortem inspection, I may be allowed to suggest that the line of fracture may have been the one now indicated.

The diagnosis of fractures of the neck of the thigh-bone has often been alluded to by surgical writers as frequently compassed with serious difficulties, and, in the case here narrated, the truth of this was experienced in some degree. It resulted, however, in the delay of only about 36 hours, which time was usefully employed in leeching and fomenting the limb. Crepitation could only be produced by moving the limb in one particular direction, which, it is perfectly possible, might have escaped me for some time longer; and the other usual symptoms of fracture were not by any means well marked. An excellent rule with reference to such cases, as well as to many others, is, to regard every single symptom as more or less equivocal, and to compare the whole symptoms present, with the history of the case, should the latter be attainable, thereby obtaining the best foundation for a sound opinion. On this point Dr. Smith of Dublin has remarked—"There is no injury as to the nature of which we shall be more frequently deceived, if we form our diagnosis from the presence or absence of any one particular symptom, than fracture of the neck of the femur, nor is it unimportant to ascertain whether there has been any previous affection of the hip-joint."

Again, when we contrast the symptoms of this case with those generally enumerated as characteristic of fracture, external to the capsule, we find them to be very different indeed. The age is the only point of resemblance, extra capsular fractures being more frequently met with among the younger subjects of fractures of the cervix femoris; but, in such, the degree of violence required to produce the injury is very great; and, consequently, the swelling and ecchymosis, if there is not some degree of laceration, is much greater and more rapid, excessive pain is produced by the slightest motion, and, upon extension of the limb, crepitation is much more readily felt, and the amount of shortening of the limb is also greater. This, I am aware, is at variance with the statements of Sir A. Cooper, but here he seems to be in error. He states it at from one to two inches; whereas there is reason to believe that from half-an-inch to one inch and a-half will include the shortening of by far the greater majority of such accidents. Dr. Smith of Dublin has adduced many cases in a tabular form to substantiate this, which may be found in the 18th volume of the *Dublin Medical Journal*, along with the following among other conclusions drawn from the detail of cases :—

"1. A slight degree of shortening, removable by the extension of the limb, indicates a fracture within the capsule.

"2. The degree of shortening, where the fracture is within the capsular ligament, varies from a quarter of an inch to one inch, or one inch and a-half.

"3. The degree of shortening, when the fracture is within the capsule, varies chiefly according to the extent of laceration of the fibro-synovial folds which invest the neck of the femur.

"4. In some cases of intra-capsular fracture, the injury is not immediately followed by shortening of the limb.

"5. This absence of shortening is generally owing to the integrity of the fibro-synovial folds.

"6. In such cases, the retraction of the limb may occur suddenly, many weeks after the receipt of the injury."

This would probably have been the condition of my patient but for his exertions in walking, when it is almost certain that laceration of the fibro-synovial folds took place, during his endeavours to reach the conveyance passing, immediately before the occurrence of his second prostration. These fibro-synovial folds have been described by several writers. They are called "*retinacula*" by Weitbrecht, and Cruveilhier speaks of their importance as often the sole means of union of the fragments, under the name of "*repli-fibro-synovial.*" These form a cylindrical sheath of considerable strength, and, in cases of fracture within the capsule, they often escape without injury, or are but slightly lacerated, when, again, to quote Dr. Smith, "they not only modify the symptoms, by maintaining the broken surfaces in apposition, and preventing the retraction of the limb, but likewise become the sole medium through which a vascular communication is preserved between the superior and inferior fragments." Thus the absence of shortening is explained, and the same circumstance may account for the unaltered position of the leg and foot in the preceding case, and the non-occurrence of eversion. It is now well known that the foot may remain entirely unaffected by the injury, as in this instance, or it may be turned outwards or even inwards; and we must not conclude that the bone is broken because eversion of the foot is present, nor, when it is absent, that the bone is sound. Several cases have been published in which inversion of the foot was observed, among others, one by Mr. Stanley in the 13th vol. of the *Medico-Chirurgical Transactions*, a case of fracture within the capsule; and Dr. Smith, already quoted, says—"I have seen three cases of fracture of the neck of the femur, accompanied by inversion of the foot, in one of which the injury was within the capsule. These cases cannot be considered with too much attention, as they are particularly liable to be confounded with dislocations, and the consequences of such an error have been fatal." This may suffice to show that the position of the foot is not to be depended upon for accurate diagnosis, either in cases of fracture or dislocation.

The pain complained of in passive adduction of the limb, though by no means peculiarly indicative of fracture of the cervix femoris, seems to be more severe in such cases, than in any of the other cases with which it is especially liable to be confounded.

Treatment.—Under this head, I shall not revive the long-disputed question whether osseous union of intra-capsular fractures ever occurs, but shall regard it as settled in the affirmative, as abundant evidence has been adduced that it has actually occurred. Some writers, however, still maintain that the union within the capsule is ligamentous, not osseous: they recommend, however, for young persons, the same mode of treatment which was followed in this case. It occurs to me also that osseous union is not such a very improbable circumstance in youths of the age of my patient, for at that time of life the ossification of this part of the body chiefly is going on to its normal completion, and the efforts of nature towards repair may harmonize, as it were, with the regular progression of the growth of bony structure. Whether this may be the actual state of matters or not, certain it is that my patient has now an unshortened limb of its natural contour, and he already walks nearly as well as before the accident.

In reference, again, to the union of fractures of the cervix femoris in persons of advanced age, when we carefully reflect upon the phenomena of progressive growth, and, its counterpart, gradual decay, we will cease to feel surprised at the fact, that such accidents in them are not, or seldom, succeeded by osseous union; "for," to use the words of the late Bransby Cooper, "not only is there the want of reparative power inseparable from an advanced period of life, but also the peculiar change which had taken place in this part of the body before the occurrence of the accident; and it is inconceivable how the union of the parts can be expected, when they have already proved incapable of preserving their continuity against the operation of the slight force, which was sufficient to produce their fracture;" and he might have added, when decay has at least commenced its progress in the osseous frame, and molecular death overcomes the now feeble reparative powers of the aged organism. Moreover, we may regard the fact of absorption of the cervix after fracture, as an event to be almost anticipated in such accidents in people of advanced years; but not at all a probable occurrence among the youthful, whose bones are only approaching their maturation.

The same considerations may account for the shortness of the period during which it was found necessary to keep the limb at perfect rest, a circumstance not unworthy of remark. The splints, bandages, &c., were laid aside within seven weeks. On this point, it is well to bear in mind that we have no recorded experience. I am not aware of any published cases of a similar age, except fatal cases. The rarity of such accidents in youth partly explains this; but, should the recording of this case induce others, who may have met with such a fracture in the young, to favour the profession with their experience of its cure, we may arrive at some data regarding them.

In conclusion, then, I beg leave to remark, that, in watching this case, I was interested in it from its comparative rarity, and much gratified by its satisfactory cure.

VI. *On the Local Use of Veratria, especially in the Scrofulous Affections of Joints.* By JULIUS BERNHAND KLINGNER, M.D., Fellow of the Faculty of Physicians and Surgeons, Glasgow.

FROM the generally unsatisfactory results of the practice hitherto adopted in the treatment of joint diseases, I was led to suspect that that practice might not be the right one. For myself, I have studied the appearances of diseased joints, not so much as pathological curiosities, but as objects worthy of the surgeon's greatest attention, by which alone he can be enabled either to preserve a limb from becoming wholly useless, or to prevent amputation. I do not make my views on the subject known from a morbid longing after notoriety, nor yet do I publish the results of their practical application with the intention of being thought original. My sole wish is, to benefit those whose misfortune it may be to labour under a disease which, by the old treatment, will sooner or later, in most cases, deprive them of life or limb.

If we trace the cause and progress of a disease with diligence and zeal, it ought to be with the ulterior view of finding a remedy for it; and we ought to have more anxiety about a cure than a case. It is every honest practitioner's duty to endeavour to save limbs as well as lives. From an amputated limb or a dead body, we may learn a great deal; but yet our time may be often better spent at the bedside of the patient, than in the operating theatre or dead-house.

The microscope has of late years opened up to us a new field for investigation, and by it especially the malignancy or non-malignancy of abnormal deposits has been ascertained. Thus it would appear that a valuable guide as to diagnosis, prognosis, and consequent indications of treatment, has come to our assistance; but the practical use that has as yet been derived from it is small, and we have advanced very little towards a more effectual mode of treatment of such structural changes and abnormal formations as have hitherto been the bane of the afflicted, and a stumbling-block to the profession. Histological inquiries have still left us almost where we were, and knavish and ignorant quacks are usurping the place of the regular practitioner, who is often compelled to give up the cure as hopeless. The truth seems to be, that, upon the force of great authorities, practitioners in general have followed an old beaten track, acting on the idea that where there is effusion and swelling, counter-irritation and local evacuations must be had recourse to. Such can only, in my opinion, be useful where redness and heat accompany the swelling; but, where such are absent, they must prove hurtful.

It is remarkable how errors once deeply rooted in the soil of prejudice and indolence are nurtured and cherished. Most practitioners must be aware of the almost utter futility of the generally sanctioned treatment of diseased joints, and yet they persevere in their abortive efforts. Their motto seems to be—"Si erro libenter erro nec mihi hunc errorem quo delector extorquere volo." Iodine, from its action on healthy tissue, has been much employed, both locally and generally, for scrofulous affections of joints and other structures, from the false idea that that which acts on healthy parts must also do so in the same manner on those that are diseased. If iodine favours absorption, it only does so when the capillaries and absorbents are still in a healthy state; where they are disorganized, no cure can be expected from iodine, for it has by no means the power of restoring them.

Pressure has also its advocates, because it has been observed that it causes diminution of bulk where the absorbents are not diseased,—the parts become atrophied, not so much by the absorbents being stimulated, as from want of proper nutrition, by impeding the due influx of blood necessary for the reparation of waste. The *effete* matter in reach of the still healthy absorbents is gradually taken up, as it were, in spite of the ill-applied pressure, and the parts diminish from want of supply. But such parts, when the absorbents have become diseased, have for all that undergone no favourable change. If the swelling appears to have become less, it is merely from the loss of the yet healthy particles adjacent and subjacent to those that are disorganized. And even if it were true that disorganized matter could be carried back into the circulation by diseased vessels, how could we expect to restore, by pressure on the soft parts surrounding a joint, the healthy balance within it, or in the cancellous structure of the bone? Pressure must cause atrophy, and forced rest and want of motion a stiff joint: thus I would discard all bandaging with or without mercurial plasters, and such like; besides, mercurials are very apt to prove injurious to scrofulous constitutions.

Arnott's pneumatic truss for the cure of cancer was some years ago very much in vogue, and the whole affair looked plausible enough; but no thinking surgeon could for a moment have believed it to have been of the slightest benefit. It was a cruel means of deceiving those suffering both in body and mind. The apparatus was irksome at all times, and became positively intolerable when the rider (a steel spring of great strength) was put on. No doubt the enlarged mamma was soon reduced in size by the absorption of the comparatively healthy surrounding parts; but the scirrhus became soon an open cancer, irritative fever supervened, torture under the truss all day, and consequent pain all night, prevented all comfort during the one, and sleep during the other; so that cases have been thus brought to a rapidly fatal termination, which, under the old palliative treatment, might have been protracted for years.

The use of blisters and all counter-irritants, as well as leeching, cupping, setons, issues, &c. I would discard *in toto*, as positively injurious. They destroy the little vitality left, and abstract those particles of the blood that are necessary for the life of the limb. Besides, by blistering, the integuments are so much changed as to prevent them afterwards from having the power of absorbing such remedial agents as are necessary for the restoration of the vitality of the subjacent absorbents. The desideratum in the treatment of scrofulous disease (as every medical man knows), is to invigorate the constitution generally, and to restore the normal state of nutrition and absorption locally in the diseased structures.

From a great many experiments I have made with veratria since 1842, it appears to me that its action is more stimulating than any other local agent hitherto employed; in fact, it seems to have an almost specific power, by which the absorbents, before diseased and inactive, are recalled to their healthy state and functions. We may consider it also as an anodyne, but unlike opium, aconite, &c.; for where it removes pain, it does so in a different manner, and more permanently. It does not blunt the nervous sensibility, but rather excites it, which is known by a tingling, pricking feeling, often accompanied by slight shocks resembling those that are produced by electricity, and by an increase of temperature, yet unaccompanied by redness, which, however, does take place when veratria has been used for a long time, and when there is a tendency to active inflammation. Although veratria is of extraordinary efficacy in chronic non-malignant swellings, especially around joints, it is inadmissible where there is heat and redness. Where, however, the active stage has passed, it is eminently useful in removing residual indurations and swellings:—thus, in tumefactions, and stiffness of joints, often remaining after sprains, luxations, and other injuries, it is as valuable an agent as in scrofulous deposits, and when synovial membranes are thickened, ulcerated, and a partial anchylosis established. Indolent and scrofulous ulcers assume a more healthy action, and cicatrize, under its use, and congestion of the surrounding tissues is removed by it.

The mode of its application must, however, be varied according to circumstances, and it requires a great deal of perseverance, both on the part of the patient and the medical attendant, as also much caution and care, in order to arrive at the wished-for result: in fact, it requires more of the practitioner's time and attention than many a one is able to bestow; but to give the remedy into the hands of the patient, if not productive of unpleasant consequences, will at least lead to disappointment as to a cure.

I have commonly used the veratria in the form of ointment, in the proportion of five to ten grains to the ounce of axunge, the veratria being at first dissolved in a little Sp. Vini or Tinct. Capsici. Of this, about the size of a small bean is rubbed into the affected part with the bare hand, gently and steadily shampooing it for a quarter of an hour. Under this treatment, the swelling will decrease sensibly every day, the joint assume a more healthy aspect, and become gradually more movable, particularly if passive motion be daily practised. No bandage of any kind is to be applied, such hindering its free motions. If the patient be anxious to have the part covered, a slip of flannel may be loosely applied. All pressure impedes the free circulation in the limb, and interferes with the free action of the absorbents. Mercurial ointments I deem worse than useless; shampooing even with simple ointment or oils is far more preferable; and when veratria cannot be longer tolerated, on account of the itching it produces, sometimes over the whole body, friction with glycerine is of immense value. No ointments or oils have I found of equal efficacy. Glycerine seems to be readily absorbed, and soon gives a more natural look to the limb, which remains moist and comfortable for a long time after its use. In applying this remedy, which on one day may appear to act with the greatest benefit, and on the next seems to have made matters apparently worse, the medical attendant requires to possess the full confidence of the patient; for not unfrequently its use is at first attended with increase of swelling and pain, though these afterwards disappear, and the expected benefit takes place.

Veratria I have found applicable to all cases of deposits from insufficient absorption of *effete* matter, which, if retained, proves hurtful, not only to the part affected, but also to the general health. These deposits occur most frequently where the capillaries are least demonstrable, and the temperature is lowest, as in the knee and elbow joints. There is a feeling of coldness complained of by patients in those localities when affected by the disease in question, and anything that gives heat for a time proves pleasant and grateful; yet warm applications, such as poultices and fomentations, although of temporary relief, always tend to increase the disease. Cupping, leeching, blisters, &c. are often used with the view of causing diminution of the swelling, and, as it is said, to subdue inflammatory action; but those who recommend such do not act according to the pathology of the case. My opinion is, that diseases which are benefitted by veratria are principally caused by want of vigour in the whole system, in which nutrition goes on well for some time; but, when there is a want of tone in the nervous as well as the sanguiferous systems, which must tell in such parts as are most distant from the nervous and sanguiferous centres, the influence of the nerves of the heart are still sufficiently powerful to stimulate it to its due action: the blood, with its nutrient particles, is carried by its force to the most remote parts of the body; but the contractile power of the capillaries has become weak, congestion takes place, and the absorbents, both from partaking of the general atony, and from being compressed by the already effused matter, are unfit to carry away the unduly accumulated *effete* materials; which state continuing for some time, and the accumulation of morbid matter daily increasing, and impeding the motions of the joint by pressure on the surrounding ligaments, cartilages, synovial membranes and bones, destructive ulceration will finally be the result.

I do not deem it necessary here to go into the details of the pathology of diseased joints, for that would be going over trodden ground; I only wish to make known the means by which the destruction of diseased joints may be averted, and limbs saved. When a joint, such as the knee or elbow, is affected by scrofulous deposit around it, and consequent ulceration, and at length partial or complete anchylosis is established, and the whole has become a bluish-white unshapely mass of slow but certainly destructive disease, doughy to the feel, and of a lower temperature than natural, some time will elapse before the veratria seems to have any effect; yet, by persevering daily with its use, and shampooing, it will gradually diminish in size, the distended, cadaverous-looking skin will present a more natural appearance, and acquire a higher temperature. If the frictions with veratria ointment be persevered in at night, and a tincture composed of concentrated tincture of capsicum, with 20 grains of veratria to the fluid ounce, rubbed in the following morning, after a time redness and heat will take the place of the former whiteness and cold, the joint itself will become more moveable and at the same time somewhat more painful. If the disease does not give way by means of absorption of the effused matter, it must be our endeavour to induce healthy inflammation by stimulating the diseased mass, by which means the scrofulous deposit is transformed in great part into laudable pus. Such, however, can only be the case when the constitution has undergone a favourable change. The doughy mass becomes softer, and fluctuation perceptible at different points around the joint; but still there will be little prospect of the abscess coming soon to maturity, for the process of absorption is in these cases very slow. The best plan is, to accelerate the suppuration, which may be easily accomplished by introducing an exploratory needle, or a sharp-pointed bistoury, into the tumour once or twice, and continue the veratria frictions. In about two days after this operation, the heat and redness in the part will increase, and a painful throbbing be complained of by the patient, with concomitant sympathetic fever. The wound made by the needle or bistoury discharges for a few days merely a little hot serum, after which the swelling as well as the heat and redness rapidly increase. These symptoms ought not, however, to alarm the medical attendant, who only sees in them a salutary effort to throw off the disease. He ought not to apply too soon fomentations and poultices: the inflammation must be allowed to come to a point which insures success, after which poultices may be applied to moderate the violence of the inflammatory action, and some cooling medicine, and, if the case require it, even colchicum may be given. Here I must warn against the too long continuance of the antiphlogistic measures, for by such the work of cure is impeded, if not frustrated altogether. When the inflammation is subdued as far as is desirable, the poultices may be continued for about two days longer, and the use of the veratria cautiously resumed, which, during the inflammatory stage, had to be discontinued. In most cases, it will now be found necessary to give a free outlet to the pus; and, when it is completely evacuated, the bottom of the wound is to be touched every day with lunar caustic, and dressed simply with dry lint; or, if very indolent, with equal parts of Venice turpentine and Ungt. Resinosum. Care ought to be taken, at the same time, not to touch the wound during the frictions with the veratria ointment afterwards. After the contents of the abscess are discharged, the joint becomes more distinct, but, at the same time, more painful to the touch. The integuments around it, from the partial destruction of the periosteum, adhere gradually to the bones themselves, which, however, in course of time are again somewhat loosened; and a loss of substance of the bone and adjacent tissues becomes apparent, by depressions in the site of the evacuated abscesses. Some little deformity is generally left, and the motion of the joint often somewhat impaired; yet, where the disease has not been allowed to proceed too far, the cure is complete. Where, however, the articulating surfaces are enlarged (which in the opinion of many almost never happens), or complete anchylosis is established, by ulceration of the inter-articular cartilages and irregular formations of osseous matter within the joint, a complete restoration of its mobility can never take place. After the deposit surrounding the joint has been either absorbed or evacuated, the remaining stiffness, if not altogether, is at least to a great degree removed by steady and cautious attempts at flexion and extension of the limb, repeated for a length of time daily, and shampooing with veratria ointment at first, and towards the end of the cure with glycerine. Besides the enlargement of the articulating surfaces, the contraction of the flexor muscles impedes very much the extension of the limb: in the elbow joint, the fore-arm is always brought into a state of semi-flexion and pronation, by the shortening and tightness of the biceps and pronator radii teres muscles; while in the knee, the hamstring muscles, from the same cause, prevent the full extension of the leg. As the joint increases in size, the limb above becomes atrophied, and the whole at last becomes a source of bodily and mental distress and irritation.

The hip joint is also not unfrequently the seat of the disease, which here implicates not only the joint itself, but is apt to carry its destructive tendency to the whole os innominatum; and I must honestly state that, in this joint, owing to its depth, veratria has not the same power, and cures of hip joint disease must be rare, and more difficult to accomplish, when compared with those of the more superficial joints.

I have also found in the course of my experiments with veratria, that in Hydrops Articuli, produced by external injuries or cold, or appearing as a sequela of typhus fever, scarlatina, measles, &c., effusions from sprains, dislocations, and chronic inflammation of the bursae and tendons, its use is of the greatest efficacy; yet it must be always borne in mind that it can only be used with safety and benefit, when no active inflammation is present, or when the constitution is not much broken down by long standing local or constitutional disease. When the patient is affected with tubercles of the lungs and mesenteric glands, we cannot expect a cure; however, mere irritative fever from local disease is not sufficient to warrant us in giving an unfavourable opinion, for if we can remove the local cause of the constitutional irritation, we may still gain our point.

As, along with the extremities, the vertebræ sometimes become affected by scrofulous disorganization of their bony, ligamentous, and cartilaginous tissues, we ought to be careful to examine well, before we give too favourable a prognosis, in cases where even the lungs and abdominal viscera appear to be healthy; neither must we in all cases rely alone upon the efficacy of veratria locally applied, great as its power of removing the local disease may be, for the condition of the viscera may have had much to do in the beginning with the after development of the local symptoms; and when these organs get into a more healthy state, upon the supervention of affections of the bones and their articulations, great care is required not to cause absorption of the morbid deposit too rapidly, lest the enemy be driven back to its former seat.

I will now illustrate the usefulness of my practice by some of the cases I have had to treat, some of which, although they were not completely cured, have, notwithstanding, given me sufficient encouragement to persevere in the course recommended. I have found it more successful than any other; and I make bold to say, that so long as no agent of greater power is discovered, veratria ought to be used in such chronic diseases of joints as are caused by abnormal nutrition, and induced by insufficient molecular absorption.

Case 1.—H. M., aged 28, dressmaker, of fair complexion, and scrofulous appearance, applied to me, on the 16th August, 1842, complaining of severe pain in the elbow joint, increased at night, for which she was anxious to get some relief. On examination, the joint appeared a bluish-white, shining mass of disease, the arm greatly atrophied, the fore-arm also atrophied, but not to such a degree as the former, the condyles of the humerus, the olecranon and coronoid processes of the ulna, as, also, the head of the radius considerably enlarged, the fore-arm greatly bent and pronated, and anchylosis almost complete. Her general health was much impaired, she had scarcely any appetite, and could obtain no sleep, except by means of opiates.

At the commencement of the disease, she applied at the Aberdeen Infirmary, but by the treatment adopted there (which appears to have been the common routine, viz., leechings, blisterings, moxas, &c.), the disease was not easily kept in check, but gradually grew worse, and at last amputation was proposed, upon which she left the Infirmary, and came to her sister in the country, preferring, as she said, to die rather than suffer amputation. When I saw her first I had little hope that any benefit could be afforded her, or that she could be prevented from an early death, except by amputation; but on being much pressed to do something, I agreed to do my best, telling her at the same time that she need not expect great help. In considering what means I should employ, I resolved to try what might be the effect of veratria in a case of this sort (having used it with benefit formerly in rheumatism, neuralgia, &c.,) considering it as a local stimulant to the nervous and sanguiferous systems. I accordingly prescribed the following ointment:—Veratria, gr. v; Spt. vini Rectificat. ʒi; Solve et adde Axung. ℥i; ft. Ungt.

Of this ointment I rubbed in about the size of a walnut every second or third day, gently champooing for a quarter of an hour. For a few days there was little apparent change, but she thought that she felt the arm a little more comfortable: in about eight days there was a sensible diminution in size, the skin looked more natural, and the veins, before not seen, became distinct. Above the inner condyle there was a large hard circumscribed tumour, like the rest of the swelling surrounding the joint. It grew gradually more soft, and after some weeks distinct fluctuation could be detected. I now thought it proper to introduce an exploratory needle into the tumour, after which a quantity of pus followed; the parts surrounding the wound became inflamed in a few days; inflammatory fever set in; the tumour became larger, more tense, red, and hot, and in fact, it had all the appearance of phlegmonous erysipelas; poultices were now applied, and some aperient medicine was administered. About a week after, I made a free incision into the swelling, and evacuated about two English pints of laudable pus, after which, a probe being introduced, the bone was found denuded in several parts. For some time the poultices were continued, and the joint became quite free. The wound healed in about two months, leaving a well-marked and depressed cicatrix. During all that time the veratria ointment was cautiously continued, and the only dressing was dry lint to the wound, and occasionally touching it with nitrate of silver. As the joint was still very stiff, and extension and supination were imperfect, gradual and gentle passive extension and supination, were exercised daily, together with frictions of glycerine, so that at the end of five months the arm was free from all actual disease, although somewhat deformed; motion in all directions was greatly improved, and the joint was rendered useful in all respects. The patient left in the beginning of February of the following year, and commenced her old occupation, at which she continued for two and a-half years; but the disease having returned, she again applied at the Infirmary, when amputation was had recourse to. I learned this about a year ago; but, I have no doubt, that with the former treatment the arm might have been saved.

Case 2.—J. M., a young gentleman from Huntly, applied to me, on the 12th March, 1845, with diseased foot, and general ill health. When I saw him first, he was for the most part confined to his bed; he was emaciated, had night sweats, and occasionally diarrhœa, and was suffering much from pain of the foot, the bones of which were in a state of softening. The astragalus, cuboid, and cuneiform bones, as well as the first, second, and third metatarsal bones, were all in this state from scrofulous disease. The dorsum of the foot was puffy, and its integuments partly ulcerated, and partly removed by iodine ointment, which he had been applying. It appears that about two years ago, he was thrown from a gig and got his foot hurt; he thought that by rest it would get better, but was deceived. He then applied to a medical gentleman, who blistered it several times, and afterwards used the iodine ointment.

In this case, my first care was to heal as much of the integuments as possible, by soothing poultices, which prevented me for about six weeks from using more effectual means. After this I used, for some weeks, the veratria ointment. The foot, in a short time, became less painful, and the skin assumed a more healthy appearance; there was a small ulcerated spot on the dorsum of the foot, which I enlarged with a bistoury, dressed the wound with dry lint, touching it occasionally with the nitrate of silver, and covered it with a small sowens poultice. In about four months after the commencement of this treatment, the whole foot was in a healthy state, the wound had healed, except a small hole about the size of a pea, which dipped down, between the second and third metatarsal bones, for about half an inch. On inserting the probe, the bones were found quite denuded of periosteum, and I was afraid that it might be a long time before it healed, but, in about four weeks after, to my great satisfaction, it closed. When he came to me, he could scarcely walk with the help of crutches; but in five months he returned home walking pretty well, and in a short time longer showed by his walk no appearance of any disease. During his stay in Portsoy, he got half a wine glassful of cod liver oil, and a glassful of port wine twice a-day, which improved his general health, and also the curative process in his foot. But neither port wine, nor cod liver oil, without the local application of veratria, would have had the effect of curing the disease.

Case 3.—Mrs. J., a lady, with whom I had been formerly acquainted, applied to me regarding her daughter, of whom I received the following history. About seven years previously she was attacked with severe pain, commencing at the insertion of the right levator scapulæ, shooting down the arm of the same side, affecting gradually the whole right side down to the heel, which she could not now put to the ground: for this she had been blistered, and cupped, and issues had been put in *ad libitum*. Her arm was hanging, wrapped up in flannel, perfectly atrophied, and most painful to the slightest touch, in fact, she could not move a joint of her fingers without causing excruciating pain. The marks of cupping, blistering, and issues, occupied the whole region of the scapula. Her gait was a shuffling motion to the side, in a bent position; her heel, as before mentioned, did not touch the ground.

By frictions with veratria ointment and concentrated tinct. capsici, in about four months she could walk upright with the help of a staff: the pain in the arm was almost entirely removed: the arm itself appeared to be gaining flesh, and motion was being restored; but she could not put her heel to the ground, from a feeling of tightness and pain above the superior angle of the scapula. There was, also, a tightness of the levator scapulæ muscle, which made the head incline to the right side. As these defects seemed to give way very slowly, I was induced to introduce a tenotomy knife, along the upper edge of the scapula, towards the insertion of the lavator, and turning its edge upwards, divided some of its inner and lower fibres, by which the head was immediately relieved, and the dragging pain was almost removed. As the operation was sub-cutaneous, only a few drops of blood were lost. The ungt. veratriæ was continued, and in a few days, as there was still a slight tightness left, I repeated the operation, which had the desired effect of restoring the free lateral motion of the head, and enabling her to put her heel to the ground, without inconvenience. After seven months, from the commencement of the treatment, she was perfectly cured, and has continued well now for about ten years.

Case 4.—J. B., aged 17, applied to me, in 1848, complaining of soreness, and wasting of his right arm. States that he began the trade of cart-wright, with his father, when young, but the work was rather too hard for him, as he was naturally of a weak constitution. Upon examination I found the arm in an atrophied state, flexion was very limited, and extension as well as supination almost impossible. The condyles of the humerus were somewhat enlarged, and behind the olecranon, and along the ridge extending from the condyles, there was considerable fulness. The skin was dry, hard, scaly, and covered with long hairs; there was pain along the course of the ulnar nerve, and upon it two small tumours, which, in particular, were very painful.

For about four months there was little appearance of amendment, except that the skin became a little more moist and soft, and more healthy in appearance. Persevering, however, with the veratria ointment, in about six months there were some indications of the veratria taking effect, the limb became fuller in flesh, extension and supination more easy, and the pain wore gradually off. A disagreeable eruption, like urticaria, with severe formication made its appearance, around the joint and up the whole arm.* This prevented me from using the veratria for some time; and now I merely shampooed the arm with glycerine, which not only allayed the disagreeable symptoms, but also seemed to give the joint more motion. Occasionally I had recourse to the veratria, but had afterwards to discontinue its use, from the before mentioned eruption recurring; the hairs at the same time disappearing as the cure was being effected. The whole time the lad was under my treatment, was full twelve months, after which the limb was brought to its former healthy condition, without the slightest deformity or impairment of motion. The case, although promising badly, turned out most satisfactory.

---

* This is a common effect of genuine veratria, which alone would prevent us following implicitly the plan of treatment recommended. The non-appearance of the eruption in the other cases would tend to prove that time alone had some effect in bringing about a cure.—Ed.

Case 5.—Mrs. B., aged 46, of scrofulous appearance, applied to me in 1846, for chronic hepatitis and ascites. Some time after the effusion within the peritoneum and the hepatic disease had disappeared, the left foot became painful and swollen, without redness or heat. In a short time the whole left foot became a mass of scrofulous disease; the cuboid, cuneiform, and metatarsal bones grew spongy, and appeared to have lost all vitality. Here the veratria reduced the swelling, allayed the pain, and restored the foot to a much more healthy state; but upon this taking place, the third and fourth dorsal vertebræ were affected by the same disease. The whole lower extremity now grew thinner and weaker, so that she could scarcely support herself upon it; she complained of great pain above the superior angle of the scapula; the pain extending from it towards the neck, as far up as the mastoid process, and towards the middle of the clavicle, and downwards along the spine on the left side to about the fifth dorsal vertebra. There was also a feeling of tightness along the fifth rib, and the pain, which was more acute towards the sternum, sometimes caused great uneasiness, and difficulty of breathing. In course of time, the fourth and fifth vertebræ showed enlargement, and were very tender to the touch. Counter-irritation along the spine, with croton oil and pulv. veratria albi gave relief for some time, but afterwards seemed to have little effect. I used, after this, tinct. of capsicum, with twenty grains of veratria to the ounce, which the patient declared to be the best application she had yet got, for she felt herself easy and comfortable after being rubbed with it. The cold feeling, she said, gave way to a sense of agreeable warmness and strength. The tightness, along the left side of the neck, I relieved very much, by subcutaneous division of the inner fibres of the levator scapulæ. Her general health being anything but good, I recommended the use of cod liver oil, which she took for a considerable time with much benefit. When her appetite failed, I prescribed a mixture of hydriodate of potass, with tinct. of calumba, which very much restored it. The whole case extends over a space of more than a year, and it would be unprofitable to report the whole in detail; besides, my intention here, is only to show how far veratria can be made useful in restoring a healthy state of parts, diseased from chronic disorganization of bony and ligamentous structures in scrofulous subjects. Although this case is one scarcely calculated to bear me out in my opinion, that veratria is the only agent upon which we can rely in the treatment of scrofulous disorganizations, as the general health was bad and the disease had taken hold of the spine; yet, from the almost wonderful effect the veratria had in restoring the foot, and from what I have seen in hospitals here, and on the continent, where many limbs, not nearly so much diseased, are daily doomed to amputation, I consider it still as a case so far in point. The patient, I am afraid, will ultimately sink from disease of the spine, for in such cases, although the veratria is preferable to blistering, and issues, it has not the same power of restoring the lost vitality, and of repairing the loss of substance, as it has in some others. Still this woman has greatly improved under the constant use of frictions with the veratria ointment. She has, however, a slight curvature of the spine, from loss of substance in two of the dorsal vertebræ.

Similar cases, but without constitutional disturbance, I have frequently treated with the veratria ointment or the tincture, and uniformly with the most satisfactory results.

I mentioned before, that to give the veratria into the hands of the patients, to be used by themselves, is often productive of disagreeable consequences; yet I have been obliged sometimes to deviate from my generally adopted rule, both on account of want of time, and of the intolerable itching the veratria causes to those that practice frequently with it. It is necessary to employ the bare hand, for no glove ought to come in contact with the limb under treatment, when we wish the remedy to act with the greatest effect.

VII. *Remarks on the Sanitary Arrangements on Board of Passenger Ships.* By James Fraser, Esq., Fellow of the Faculty of Physicians and Surgeons, Glasgow, Government Medical Inspector of Emigrants from the Clyde, &c.

In addition to various other legislative measures, called into existence by the excessive mortality which occurred on board of passenger ships from this country prior to 1848, it was enacted, that in all cases where the number of individuals carried by any vessel exceeded a certain limit, they should undergo an examination immediately subsequent to embarking, by medical officers appointed for the purpose, to whom was delegated the power of causing to be relanded any person suffering from contagious or other diseases, likely to endanger the health or lives of their fellow-voyagers. This law remains in full force; and in discharging the duties for the Clyde ports, nearly 70,000 emigrants have come under my notice.

In the practical discharge of few duties could the medical observer find himself beset with more numerous difficulties in the way of diagnosis. The search is for specific disease, seldom or never feigned, but frequently attempted to be hid, and is one requiring to be somewhat summarily made. It has, moreover, to be prosecuted among a class of persons acted upon by an unusual combination of intrinsic and extrinsic circumstances.

A glance at the crowded decks of a well-filled emigrant vessel on the eve of departure, will at once show that few of the individuals are in a condition of perfect health. Bacchanalian revel, and the depressing passions, the fatigue of travel, and inattention to diet, &c. while predisposing all of them, will be found to have excited disease in many. Nor will the difficulty be obviated by viewing the passengers *seriatim*. Necessarily imperfect as the scrutiny is, it has been found productive of vast benefit in arresting the spread of *zymotic* maladies. From the publicity the inspection has now acquired in all parts of the country, the subjects of contagious disorders are generally deterred, for a time, from leaving their homes. In securing the passages of so many persons, the owners or agents, at the various ports, anxious to avoid the trouble they not unfrequently experience in relanding the sick with their effects, invariably refer suspicious cases to the health officers, and the final survey seldom failing to intercept any well-marked cases, the ship for the most part leaves with a clean bill of health; although in effecting this, instances not uncommonly occur in which the nicest discrimination would fail to avert individual hardship. One person, for example, will be found suffering from all the premonitory symptoms of fever, another with catarrhal ophthalmia, a third prostrated with signs closely resembling those which herald an exanthem. These are put on shore, when, under quiet and more favourable hygienic circumstances, the predictions legitimately enough formed may probably not be realized, and every one of them may soon be well. It must be borne in mind, however, that the vessel, with its living freight, is frequently on her voyage within an hour or two after such an examination has been instituted, and had an opposite error been committed, not only would the patients themselves have been exposed to the action of those agents which impart intensity to these affections, but the fever speedily becoming *adynamic*, the opthalmia purulent, and the rash malignant, would ere long have led to the most disastrous results. To the noxious agents alluded to, brief reference may here be made.

In vessels intended to pass within the tropics, 15 clear superficial feet of the passenger deck are allowed for each adult, two children between the ages of one and fourteen years being computed as such, while infants are not reckoned. To New York, Canada, and other places not inter-tropical, 12 feet are allowed; but in the great majority of cases, and in order to evade that part of the act which makes it imperative to carry a surgeon, ships to the latter ports give 14 feet. The height of the 'tween decks must not be under 6 feet, and may average about 7; but in almost every case the space indicated is much infringed upon by personal luggage. The absolute number of persons, often erroneously inferred to be on board, from the number computed as statute adults generally being given, may be guessed at by the following figures, taken at random from the lists of two ships which have this year left the Clyde for Transatlantic ports, in which, for obvious reasons, the number of females and young children greatly preponderates over that in those destined for Australia:—

Ship ——— for New York.

No. of male adults,	130		130
„ female ditto,	88		88
„ males between 1 & 14,	46		23
„ females, ditto,	36		18
„ infants,	21		—
No. of persons,	321	No. equal to statute adults,	259

Ship ——— for Quebec and Montreal.

No. of male adults,	81		81
„ female ditto,	77		77
„ males between 1 & 14,	33		16½
„ females,	37		18½
„ infants,	12		—
No. of persons,	240	No. equal to statute adults,	193

In the vessels for America, with the exception of a partition of open lattice work, thrown up to separate the unmarried males above the age of fourteen, there is often no barrier throughout the entire length of the steerage, either to preclude personal intercourse, or to assign limits to contagious emanation. If, when unable in bad weather to go upon deck, such a number of people are confined for many hours together below, with the side-ports shut, the hatchways partially closed, and the space between decks loaded with animal exhalations, some idea may be formed of miasmal intensity under disease;* and thus it is not wonderful that, during the epidemic of typhus, about the period when the above act came into operation, the mortality on board of these packets nearly trebled, in its relative amount, that occurring in any hospital on shore.

The rapidity with which this fever spread, not only on board, but among the attendants of the various lodging-houses, and the officials of the United States and Canadian hospitals into which the passengers were received on their arrival, may be best explained by non-contagionists; it appears to me, however, upon a careful inquiry into the circumstances connected with the passenger trade to America about this period, in its relation to typhus, that facts are elicited which go very far to prove it is occasionally a disease *de novo*.* How, otherwise, I would submit, could its existence be satisfactorily accounted for? During nearly eighteen months prior to March, 1848, it seized on every crowded passenger ship between this and America; while merchant vessels, and those with emigrants in limited number, although traversing exactly the same course, escaped. It may be answered, that the unfavourable conditions in which the people were crowded together, acted as potent predisposing causes in the former, to which the latter were not subjected. But granting this—ascribe its origin to an epidemic constitution—and this state of the atmosphere must be allowed to have existed for the above period, in every degree of longitude, and in every parallel of latitude over which these ships sailed; for, in some instances, the disease made its appearance ere the vessels lost sight of our own shores; in others, after protracted passages of ten or twelve weeks, it only manifested itself when the vessels were off the ports of New York, or the harbours in the St. Lawrence; while, in a third set of cases, it was developed in every part of the nearly 3,000 miles which intervene between this and some of the Transatlantic ports. It were indeed easy to account for the fact, that where few people were collected together, there was a small relative mortality, but they were not even visited by the scourge. An additional argument for the validity of the foregoing conclusions seems to be found in the fact, that among the less crowded and better fed, who were at the same time *en route* for the Cape and Australia, typhus was altogether unknown.

---

* I do not here refer to those large ships with lofty and well-ventilated 'tween decks, a number of which annually carry passengers across the Atlantic from the Clyde, my object being simply to indicate the manner in which the *large majority* of persons in the steerage are still accommodated.

It may be urged that, according to the above theory, this form of fever ought to exist in these ships still; nay, seeing that larger numbers emigrate now than did then, so ought this dire disorder to find more victims. The answer to this, on the contrary, gives force to the deduction drawn. At and previous to the period to which I have referred, the passengers carried their own provisions, and such was the poverty of not a few in every ship, that, debilitated when they set out, they were frequently to be found embarking with scanty supplies of food, chiefly non-azotised, calculated to last for four weeks only; when, as has already been stated, the voyage was not unfrequently one of ten or twelve weeks' duration. Then, too, the space allotted to each was more limited. No sooner, however, was this enlarged, and *all* the passengers furnished from the ship with what, to many of them at least, must have been a liberal* dietary scale, irrespective of their own supplies, than typhus disappeared. Neither could an incubative stage, nor the action of *fomites*, in so many instances remain in abeyance for ten or twelve weeks. In fine, to the improved condition of the poorer section of these people, as to ventilation and diet, I would more readily ascribe the absence of this fever, than to its non-existence in any widely-spread form in this country since; and heterodox to some as this theory may appear, my observations have impressed me with the belief, that to malarious origin, as well as specific contagion, must the production of this fever be occasionally ascribed. Passing, however, from this retrospective glance, and from debateable ground, I would observe—trite as the observation now is—that, whether born of, or merely nurtured by deficient nutrition and impurities, here is incontrovertible evidence of the fact that their absence—be they proximate or remote—is marked by a comparatively small sacrifice of life.

---

* The identity of this disorder with typhus was denied by many, and under the name of "ship fever" it was regarded as an affection *sui generis*, sprung from deficient nutrition and ventilation—an opinion which cannot be entertained by any one who makes an unbiassed examination of the symptoms.

It is almost superfluous to add that, in the spring and early summer months, when the New York and Quebec ships from this country carry large numbers of people, epidemic diseases hardly if ever assume a phlogistic character. In fact vascular depletions are seldom required, and never well borne. Illustrations of this have in numerous instances been furnished, during the prevalence on board of the more fatal exanthematæ and variola, in which the mortality has sometimes reached 35 per cent.! Familiar as I am with the immense number of grown children, who leave this part of the country unvaccinated, the fatal character of the pustular affection, under the unfavourable circumstances already indicated, does not surprise me; nor will these, together with the cold and wet, and atmospheric vicissitudes to which the sufferers are so often exposed, fail to explain the fatal congestions of measles, or the aggravation of the most common and serious of the sequelæ of scarlatina. From this latter cause, the voyage, often acting as a specific in advanced and uncomplicated hooping-cough, gives to it the most deadly form among those in whom the affection is recent.

The frightful mortality from cholera, which has recently taken place in a number of the New York packets from Liverpool, and some of the continental seaport towns, has led to the issue, by the

---

* In addition to, and irrespective of any provisions of their own, which any passenger may have on board, each statute adult now receives during the voyage, weekly—

2 quarts of water (daily).
2½ pounds of bread or biscuit.
1 — wheaten flour.
5 — oatmeal.
2 pounds rice.
½ — sugar.
2 oz. tea, or 4 of roasted coffee.
2 — salt.

Quantities of beef, pork, preserved meat, may, and very generally are substituted for an equivalent in value for articles in the above scale, which, meagre as it is, is greatly superior to the ordinary fare of the lower orders of Scotch and Irish, who formed so large a portion of the passengers about five years ago.

Emigration Commissioners, of a notice, in which, in addition to some valuable suggestions, they advise parents with young children, and weakly persons, who may be contemplating emigration, to postpone their departure until a milder season; and point out to all, the necessity of avoiding crowded vessels, and those not provided with medical men.

The facilities afforded by steam communication between this country and the United States, hitherto chiefly confined to the more opulent classes, promise at no great distance of time to be extended to the humblest of our countrymen. Already one screw steamer carries passengers thither from this city, and others are, I believe, in the course of construction. The length of the passage has not hitherto exceeded fourteen days, and has been accomplished in twelve; and for the sum of seven guineas the subjoined* dietary is guaranteed, whatever, within the computed length of the passage, (forty days in vessels propelled by steam,) the voyage may be. When their comparative immunity from maritine disasters, the better opportunities they afford for the purposes of ventilation, cleanliness, and cooking, and, above all, the brief period occupied in the transit, and the consequent small risk of ocean epidemics, are taken into account, the latter conveyances cannot fail soon to become almost the sole channels of the growing intercourse between the two nations.

With the exception of the increased space, the accommodation for those in the steerage in Australian bound ships, differs little from that already described as existing in vessels destined for the American ports; but their numbers are in general much smaller in proportion to the cabin and intermediate passengers. The intermediate berths, fitted up in small enclosed cabins on each side of the deck, are divided from the steerage by a bulkhead, the size of the compartment varying with the number of the occupants; but, as in the former place, the number of square feet appropriated for the use of each statute adult is only fifteen.†

The smaller proportion of females and children among the Australian emigrants, as contrasted with the figures at page 447, is here shown:—

---

* Each adult passenger will be supplied with 3 quarts of water daily; and, weekly, with—

2½ lbs. of bread.
2 — of fresh bread or flour.
¼ — of flour.
3½ — of oatmeal.
1 — of rice.
3 — of potatoes.

½ lb. of peas.
4 ounces of raisins.
2¼ lbs. of beef.
1½ — of pork.
1 — of fish.
1¾ ounces of tea.

2 ounces of coffee.
14 — of sugar.
⅞ pint of molasses.
¼ — of vinegar.
Pepper and salt.

† *Bona fide* cabin passengers, who are so far exempted from the operation of the Passenger Act, have each thirty-six square feet of space allotted to their exclusive use; and the arrangements for light, ventilation, and general comfort, are in most cases nearly all that could be reasonably desired at sea.

Ship ——— *for Melbourne, Port-Philip.*

No. of male adults,	202		202
„ female ditto,	50		50
„ males between 1 & 14,	22		11
„ females, ditto,	21		10½
„ infants,	7		—
No. of persons,	302	No. equal to statute adults,	273½

Ship ——— *for Melbourne, Port-Philip.*

No. of male adults,	126		126
„ female ditto,	47		47
„ males between 1 & 14,	16		8
„ females, ditto,	25		12½
„ infants,	6		—
No. of persons,	220	No. equal to statute adults,	193½

The condition of the large numbers who have latterly left this country for the Antipodes is, on the whole, much superior even to that of the greatly improved class who have of late years followed their more primitive predecessors to the western world; but though physically in a much better state when they embark, and carrying with them, as they almost invariably do, abundance of clothing, and all the dietetic* comforts and luxuries which forethought suggests, and the possession of means enables them to obtain, still their sanitary condition on board ship, where many of them are congregated together, is but a modification of that already adverted to.

I am earnestly desirous of directing the attention of my medical brethren throughout the country to this fact, as many of them, strangers to the hygienic circumstances of Australian emigrants at sea, have erred in sending patients, the subjects of advanced

---

* The following dietary scale, in use by a Glasgow firm in the Australian passenger trade, differs little from that generally adopted :—

Weekly Scale of Provisions for Intermediate and Steerage Passengers.

2½ lbs. biscuit.
2 — beef.
1⅓ — pork.
1½ — preserved meats and soup.
1 lb. flour.
½ — raisins.
⅔ — peas.
6 oz. suet.

1¾ oz. tea.
3½ — coffee.
1 lb. sugar.
6 oz. cheese.
8 — butter.
1 lb. rice.
3 lbs. potatoes, raw.
1 gill vinegar.

21 quarts water.
⅓ lb. tripe.
3½ lbs. oatmeal.
2 oz. salt.
¼ — mustard.
1 pint preserved milk.
¼ oz. pepper.
½ lb. treacle.

Rice is served out as a substitute for potatoes, or when the potatoes are expended—(1 lb. of rice or oatmeal being equal to 3 lbs. of raw potatoes; and 1 lb. preserved potatoes equal to 3 lbs. raw potatoes.)

tuberculosis, in search of health abroad, where they have too often found watery graves. In proof of the assertion, that this advice has been too indiscriminately given and acted upon, I have but to adduce the fact that *considerably more than one-half of the adult mortality on the passage from the Clyde to Melbourne and Sydney, within the last three years, has arisen from phthisis.* As the cases, moreover, are every day becoming more numerous, in which the consumptive have relations settled in that distant colony, so much the more necessary is it, that the medical adviser should impress his patient with the necessity of avoiding the steerage or intermediate compartments of a crowded ship, in which the anticipated advantages of a voyage into more genial latitudes is often more than counterbalanced by the debilitating effects of the impure atmosphere to which, under such circumstances, he is necessarily confined. I would even hesitate to recommend such a step as a *prophylactic* in the simply predisposed, much less, expect by such means to alleviate the symptoms arising from extensively disorganized lungs. Yet have I, in more instances than one, felt it necessary to have patients assisted out of their berths and sent on shore, in whom excessive purulent expectoration and other symptoms unerringly foretold a fatal event. The cases are much more numerous in which such patients have died before getting clear of the land. I have repeatedly had occasion to separate from among healthy passengers subjects of extensive strumous ulcerations, the profuse discharge from which threatened, by acquiring an intolerable fetor under an equatorial sun, to become sources of positive injury to others. In all the cases of this kind which have come under my observation, the parties have been amply furnished with medical certificates, to the effect that they are free from contagious disease. Under these and similar circumstances my duty has often been a very painful one, and like the gentlemen who hold similar appointments at other ports, I have occasionally incurred the charge of want of attention to professional etiquette.

It is not at all necessary that consumptive patients, in seeking the great and acknowledged benefits of such a voyage and residence in a warm and more equable climate, should encounter so fearful a risk, deprived too, as they often are, of the kindly solaces of those to whom their existence is dear; for to such, almost weekly opportunities are afforded of securing passages by vessels not coming under the act, and carrying one or two, seldom more than half a dozen people; in these, accommodation is generally afforded in houses on the upper deck, in which, so far as ventilation is concerned, the health may be preserved intact. To the more affluent the first cabin furnishes an exemption from the evils referred to: to this matter the consumptive, and the subjects of cachectic disorders in general, who contemplate such a change, would do well to turn their attention.

Never, it may be safely averred, will any system that medical police can devise, succeed in disarming disease on board ship to the same extent well directed sanitary measures have done, in properly regulated dwellings on shore. It is fearful, nevertheless, to speculate on what the mortality would have been during the late amazing exodus, but for the salutary operation of the Passenger Act.

From among other sections of this act,* having immediate reference to the preservation of health, the 21st and 38th may be referred to as still requiring amendment. The former provides that "In every 'Passenger Ship' a Space shall be properly divided off, to the Satisfaction of the Emigration Officer at the Port of Clearance, and set apart for an Hospital, not less, in Ships carrying as many as One hundred Statute Adults, than Fifty-six clear Superficial Feet, with Four Bed-berths erected therein, and properly supplied with Bedding; nor less, in Vessels carrying Three hundred or more Statute Adults, than One hundred and twenty clear Superficial Feet, with at least Eight Bed-berths properly supplied as aforesaid." To make this hospital really serviceable in isolating the sick, it appears to me essential that the site of it should be the upper, not as hitherto the main deck; placed as it has been (I refer to the Clyde ships) in the latter situation, in which the whole of the steerage passengers live, it is scarcely ever ventilated from above, and as the partition forming its sides is constructed of boards run up diagonally, with interspaces of an equal breadth, little if any limit is set to the spread of contagion, while the very concentrated form which it acquires when the 'tween decks are full of people, leaves the susceptible little chance of escape. From the great difference in the construction of ships, it would be impossible to indicate an unvarying position for a strongly built house upon deck for the purpose of an hospital; but any practical difficulties could, I apprehend, be easily got over, and the addition to the numbers which could then be carried, with the greatly diminished risk from contagious effluvia, and the consequent escape in a large number of instances, from quarantine detention, could not fail eventually to make up for the little additional expense that might be necessary. Not only would the patients gain by this transference, in ceasing to be exposed to the close atmosphere below, but contagious emanations, thus greatly diluted, would become comparatively innocuous. Light could be readily admitted through glass panes placed on the sides and immediately under the roof of the house on deck; these, without the light being interrupted, could be protected by wooden boards projecting from the ceiling, the latter being fitted up with perforated zinc plates. Here, too, the most noisy moods of Œolus would be harmony to the aching head, compared to the Babel sounds below.

---

* An Act to amend and consolidate the laws relating to the carriage of Passengers by Sea (15 and 16 Vict., chap. 44).

The second section alluded to enacts, that "every 'Passenger Ship' shall carry a duly qualified Medical Practitioner in the following Cases, who shall be rated on the Ship's Articles:—

"First, when the Duration of the intended Voyage, as hereinbefore computed, exceeds Eighty Days in the Case of Ships propelled by Sails, and Forty-five Days in the Case of Ships propelled by Steam Engines, and the Number of Persons on board (including Cabin Passengers, Officers, and Crew,) exceeds Fifty:

"Second, when the intended Voyage is to *North America*, and the Number of Passengers exceeds One hundred 'Statute Adults,' and the Space allotted to such Passengers on the 'Passenger Decks' is less than Fourteen clear Superficial Feet for each 'Statute Adult:'

"Third, when, whatever may be the Destination of the Ship, or the Space allotted to the Passengers, the Number of Persons on board, (including Cabin Passengers, Officers, and Crew,) exceeds Five hundred."

From the first paragraph it would appear, that all sailing ships proceeding to Melbourne or Sydney, (the length of the passage for the purposes of the act being determined at 140 days,) should be provided with qualified medical men, but according to the definition of terms in the third section, so long as a greater number of passengers are not carried than in the proportion of one Statute Adult to every 25 tons of the registered tonnage of the ship, she is not in legal phraseology a "Passenger Ship" at all; and practically ships with considerably more than 50 persons on board do occasionally leave this country for Australia, though to the honour of Glasgow and Greenock, I am not aware of advantage having been taken of the definition here.

The second requirement shows, at the same time, how it may be avoided, and in the numerous sailing vessels which leave the Clyde for New York with 2, 3, and sometimes nearly 400 people on board, medical officers are seldom or never taken; while by giving the same space the third specification shows that any number below 500 can be carried without a qualified practitioner! Surely the act, replete as it otherwise is with the wisest and most humane provisions, is monstrously defective when it thus gives to avaricious shipowners the power of placing nearly 500 people, often for eight or ten weeks, unusually exposed to the causes of disease and accident, beyond the reach of professional aid.

Much has been said and not a little written on the inadequate remuneration given to medical officers of emigrant ships, but while I would be sorry to attempt to exonerate those among the shipowners and agents, who by impolitic parsimony have incurred the odium heaped upon them, through the medium of our periodicals, it still appears to me that the members of the profession are most at fault. Attracted by the lawless fascinations of such places as Bendigo and Ballarat, the numerous *parias* amongst us met the unprecedented demand for ship surgeons, for some time after the discovery of the Australian gold fields, and their services were readily procured for merely nominal sums; but now that they are chiefly valetudinarians, and the newly licensed, men for the most part of the highest respectability and worth, unanimity is alone necessary to procure suitable pay, and what is of equal consequence, the exclusive use of proper cabins. On every one not intending to reside in the colony, I would urge the necessity of obtaining a written agreement, permissive of their return home by the ship in which they go out. From want of attention to this there were, a few months ago, many medical gentlemen in Melbourne (forming at that time about two per cent. of the population!) supporting themselves by manual labour of various kinds, until remittances from the mother country enabled them to return.

It has been seen that few passenger vessels leave this country for Australia, in which surgeons are not imperatively required by law. The Commissioners, whose office it is to carry this law into execution, have, in their treatment of the medical officers whom they appoint to ships carrying Government Emigrants, shown an example worthy of all imitation, the pay, half a guinea for each passenger landed, being increased according to length of service, while to their *status* on board the most fastidious could not take exception.

VIII. *Cases in Clinical Medicine.* By ROBERT MACGREGOR, M.D., one of the Senior Physicians to the Royal Infirmary of Glasgow.

SKIN DISEASES.

Case 1.—*Psoriasis Guttata.—Catherine M'Donald, aged* 24, *unmarried.* 15*th Nov.*

Was treated in No. 2, three years ago, for a severe attack of psoriasis, and dismissed nearly free from the disease; but ever since has had more or less of the eruption. On admission, there were only a few small circular spots on arms and legs, of a brownish colour, and covered with thin shining scales, but these are attended with such a degree of painful itching and formication, as to prevent her from sleeping at night. Is occasionally troubled with nausea and vomiting. Tongue white; bowels regular; pulse 64, of ordinary strength; appetite good.

℞ *Solution. arsenical.,*............. ʒij.
Bicarbonat. potassæ,............ ℥i.
Aquæ,........................... ℥xij. *Solve.*
Sumat, ℥*ss. ter in dies.*

Dec. 6.—Eruption disappearing, but has some slight œdema of face. *Omit. mist. et vice utatur mist. acetat. potassæ.*

10*th.*—Urine alkaline and phosphatic. *Omit. mist. acet. potassæ, et hab. solut. arsenical. gtts.* x. *ter in dies ex aqua.*

15*th.*—Skin retains feebly the marks of the eruption. Urine acid. Dismissed.

Case 2.—*Mary Fulton, aged* 27. 4*th March.*

Eighteen months ago, without any assignable cause, observed a few red spots upon the legs, which soon became covered over with white scales. Shortly after, the eruption appeared on both arms, the spots got more numerous around knee and elbow joints. Has been under treatment for a considerable time, the nature of which is unknown, but the eruption has not been much improved.

At present, on the fore-arms, and around the elbow and knee joints, there are large and irregularly shaped patches of reddened cuticle, covered with white glistening scales, having thin edges, and divided by numerous fissures. Tongue white; bowels regular; pulse 60, of good strength and fulness. General health good.

℞ *Solut. arsenical.,............. ℥j.*
Bicarbon. potass............. ʒvij.
Aquæ,...................... ℥viij. Solve.
Hab. coch. med. ter ind. Fomentations to the parts.

18*th April.*—Has gone on improving steadily, and is this day dismissed cured.

Case 3.—*Ann Robison, aged* 34, *factory girl.* 14*th April.*

On admission, complains of great pain over the lower third of the outer aspect of left leg. Its integuments are slightly inflamed, and the part is acutely tender to touch. She has been troubled with this for two years, and cannot assign any cause for it. A blister was applied to the pained part a few days ago, without relief.

On both legs, and around the elbow joints, there are several irregularly shaped patches, covered with dry white scales, but not attended with much itching. They commenced about a year ago, and have not been spreading much lately. Tongue white; bowels regular; pulse 96; appetite good. *Foment. part. dolent., et hab. solut. arsenical., cum bi-carb. potass. more solito.*

May 1*st.*—Scaly eruption completely gone.

3*d.*—The pain in left leg still continues. *App. vesicat. part. dolent.*

7*th.*—No diminution in the pain, which still continues in the same spot. The integuments over the parts continue inflamed; and there is a feeling of deep-seated fluctuation. *App. cataplasma lini.*

22*d.*—No change since last report. *App. ferrum corrigani part. dol.*

26*th.* — Dismissed irregular, yet quite cured of the eruption.

Case 4.—*Elizabeth Templeton, aged* 23, *factory girl, unmarried.* 5*th April.*

Assigns exposure to excessive heat and cold alternately, as the cause of her present disease. It commenced about four months ago on right leg, as a small red spot, which soon became covered over with scales. It gradually extended to other parts of the body, and at present the whole surface of the skin is more or less affected with irregularly shaped patches, with thin edges and elevated centres, and covered with white shining scales. Upon the face, upper and lower extremities, where the patches have coalesced, they are intersected by transverse fissures. Tongue whitish; bowels open; general health good. Has had no treatment.

℞ *Solut. arsenical.*,......... ℥i.
Bicarb. potassæ, ... ʒvj.
Aquæ,..................... ℥viij. *Solve.*
Sumat coch. parv. ter in dies.

29*th May.*—Has continued the above treatment till this date, and is now dismissed cured.

Case 5.—*Helen Lyons, aged* 40, *married.* 13*th June.*

On admission, patient's legs and arms are the seat of several irregularly shaped scaly patches, having the usual characters of psoriasis. One or two spots of smaller size, are also situated on the anterior aspect of the trunk of the body. Tongue whitish; bowels regular; general health good. Denies ever having had syphilis. Was under treatment for some time at the Dispensary, without benefit.

℞ *Solut. arsenical.*,............... ℥i.
Bicarbonat. potassæ,.......... ʒvj.
Aquæ,.......................... ℥xij. *Solve.*
Sumat. cochl. mag. ter in dies.

28*th July.*—Dismissed almost well.

Case 6.—*Mrs. Deolin, aged* 24. 16*th Sept.*

Twelve months since, observed a number of red patches on arms, and afterwards on legs. The eruption, at present, is copious, consisting of irregular patches, fissured around the joints, and quite characteristic of *psoriasis.* Has been under treatment. General health good; has occasional headache; pulse 96, firm; tongue clean; bowels costive.

℞ *Acetat. potass*................ ʒvj.
Aquæ,......................... ℥vj. *Solve.*
Cap. ℥ss. *ter in dies. Utat. baln. tepid. cum bicarb. potass.*

Oct. 12*th.*—There is a slight appearance of triple phosphates in urine.

Oct. 25*th.*—Dismissed improved, by desire.

Case 7.—*William Wood, aet.* 22, *labourer, unmarried.* 3*d March.*

About nine months ago, without any assignable cause, observed a scaly eruption to commence near left ankle, which soon spread over the whole body. Habits temperate; general health previously good. Has had no treatment. At present the whole body is covered with irregular patches of dry white scales, situated on an inflamed base, raised in the centre, and thin towards the edges. These patches have become confluent around the elbow joints, and are intersected by numerous lines and deep fissures. The patches on the legs and thighs, especially on the inner aspect of the latter, are also confluent, and divided by deep fissures, some of which are bleeding, and discharging an ichorous fluid. The lower extremities are red and swollen, and their integuments are much thickened. He complains of great heat and itching of the skin. Tongue clean; bowels regular; pulse 80, full. Had syphilis a year ago, for which he was mercurialized.

℞ *Solut. arsenical.*,............ ℥i.
Mur. hydrarg corros.,....... gr.vj.
Aq. bullient.,................ ℥ij.

Solve. muriat. in aqua, dein adde. solut. arsenical. Hab. guttas xxv. *ter in dies.*

Patient is sickened by the medicine. *Add. mistur. iodid. potass.* ʒj, *et diminuat. dosis ad gtts.* xij.

19*th April.*—Dismissed, by desire, nearly well.

Case 8.—*Sarah Cameron, aged* 25, *married.* 9*th Dec. Lepra Vulgaris.*

Six years ago was successfully treated in this hospital, for an affection similar to that under which she now labours. Four months ago, without any assignable cause, the disease again commenced upon the face, and gradually extended to other parts, which at present are almost completely covered with hard rough cuticle, of a bright red colour, slightly fissured, and exhibiting on its surface thin shining scales. The arms, face, trunk, and lower extremities have all numerous patches, of various shapes and sizes, covered with shining white scales, having depressed centres, with red and elevated borders. The eruption is in small round elevations of the cuticle, which soon become scaly on the surface and increase in size, retaining an oval or circular form when separate, but forming the irregularly shaped patches now seen when they become confluent. They are not attended with any uneasiness or itching. Tongue clean; bowels costive; pulse 108, of natural strength; appetite good. Is of temperate habits. *Hab. haust. nigr.* ℥iv.

10*th.*—℞ *Solut. arsenical.* ℥i. *Hab. gtts.* x *ter ind. ex decocto ulmi campestris, et utat. o.n. baln. tepid. cum carbonat. potassæ.*

18th Jan.—Skin almost well. Dismissed by desire.

Case 9.—*Charles Grieve, aged* 25, *flesher, unmarried.* 18*th March.* On admission the whole skin is covered with an eruption of small red spots, circular in outline, and covered with a few thin white scales. The eruption is not at present attended with much itching or uneasiness. Skin hot; tongue white; pulse 72, of ordinary strength and fulness; bowels regular. States that he was treated in this ward about 13 months ago, for the same disease, and was dismissed nearly well. The spots, however, never entirely disappeared, and he has since that time, with a few intermissions, continued the use of the iodide of potassium and sarsaparilla, which had been recommended. He had an attack of fever sometime ago, and upon his recovery the eruption began to spread, and has gradually been extending. Since its recurrence he has been mercurialized, and has been taking arsenical solution. He had syphilis about eight years ago.

℞ *Solut. arsenical.*,............ ℥i.
Mur. hydr. cor.,............ gr.vj.
Iodid. potassii,.............. ʒi.
Aquæ bullient.,.............. ℥ij.

Solve. muriat. in aqua, dein solut. arsenical. et iodid. add. Hab. gtts. xv. *ter ind. ex aqua.*

May 8*th.*—Skin still discoloured, on site of the former eruption, but no new spots are appearing.

9*th.*—Dismissed.

Case 10.—*Arthur Neale, aged* 22, *unmarried, weaver.* 5*th Sept.*

States that he has been affected with his present malady for the last ten years. It commenced first around the knee joint of right leg, to which extremity it was confined for two years. It then spread over the whole body in the course of a few nights, since which it has never entirely disappeared. On admission the whole body is covered with bright red spots of a circular figure, in the centre of which are white scales of altered cuticle. The spots are confluent on the extremities. Has been mercurialized, but without benefit. Denies ever having had syphilis. General health good; pulse natural; tongue dry; bowels regular.

6*th.*—*Hab. baln. tepid. o.n.*

8*th.*—*Omit. baln. tepid. et utat. baln. alkalin.*

℞ *Acet. Potass.*,................. ʒvj.
Aquæ,......................... ℥vj. *Solve.*
Hab. ℥i *ter in dies.*

14*th.*—Considerable deposit of triple phosphates in urine. Disease is much modified in intensity; natural colour is returning to the cuticular surface, and general health continues good.

19*th.*—Is considerably improved, though progress is very slow.

℞ *Solut. arsenical.*,............ʒij.
Acet. potass.,................ʒvj.
Aquæ,........................℥vj. *Solve.*
Habeat. ℥i *ter in dies.*

20*th Dec.*—Since last report, has progressed steadily, and he is this day dismissed cured.

Commentary.—It is generally admitted that the different forms of lepra and psoriasis are but phases of one disease, and consequently that the treatment must be in most respects similar. I have found the internal remedy most effectual to be Arsenic, in the form of Fowler's solution, combined with a large proportion of potash, generally as bicarbonate. To this it has been necessary at times to add tincture of cantharides; and in cases having a syphilitic taint, Denovan's solution was used instead, prepared in an extemporaneous form, which commends itself for its simplicity. The officinal is troublesome to prepare, and may not be in the hands of the country practitioner. The extempore formula is—

℞ *Solut. arsenical.*,............℥i.
Bichlorid. hydrarg.,........gr. vj.
Iodid. potasii,...............ʒi.
Aquæ calidæ,...............℥ij.
Solve bichlorid. in aqua, dein solut. arsenical. et iodid. adde; dosis gutt. xv. *ter ind. ex aqua.*

The external applications principally employed were water or buttermilk fomentations, and at times diluted tar ointment, or Carron oil, and alkaline baths. After what I conceived to have been a fair trial of the acetate of potash, as directed by my friend and colleague Dr. Easton, in his excellent paper in the 10th volume of the *Edinburgh and London Monthly Journal*, I found the benefit from the treatment described more decided, and hence I gave it the preference.

Case 11.—*Elizabeth Hall, aged* 20, *dressmaker,* 20*th December. Pemphigus.*

Six weeks since, without any assignable cause, a number of bullæ appeared on the fingers of both hands, and burst, giving a clear amber-coloured fluid. They then appeared on the arms, and at present the right is denuded of cuticle. The parts exposed are red and irritable, bleeding from the slightest cause. The hands and fingers are likewise denuded of cuticle. The bullæ appear to have become confluent, as no distinct patch is observed except one, which at present has not given way, being about the size of a thumb nail, situated in the upper external aspect of the palm of the right hand. General health is good. Catamenia regular. Tongue white, bowels normal. *To have Epsom salts and Tartrate of antimony every second hour.*

23d.—Pulse quiet. *To have lin. calc. applied to the affected parts.*

28th.—The eruption is drying up, and no more vesicles have made their appearance.

Oct. 8th.—Is now nearly well. A few reddish spots have shown themselves over the lower and upper limbs.

11*th.*—Some appearance of psoriasis has presented itself on right leg in several places. *Fowler's solution three times a-day.*

In as far as the pemphigus is concerned, is dismissed well.

Case 12.—*William Pettigrew, aged* 19, *farm servant.* 14*th Dec.*

An eruption of vesicles appeared about a month ago on various parts of the body, and was at first attended with great itching and heat of skin. This still continues, and new vesicles are forming, but are not accompanied with any itchiness. The vesicles are about the size of a pea, nearly circular, with an inflamed base. The contained fluid, which at first is quite transparent, soon becomes opaque, and the vesicle, bursting, becomes covered over with a yellowish crust. The eruption is most copious and confluent on the shoulders and arms. Tongue white; bowels open; pulse 96. General health not impaired. Appetite good. Had some medical treatment previous to admission, but with no improvement. *Plummer's Pill every night. Tepid bath.*

31*st Dec.*—Dismissed well.

Readmitted on the 26th September following. Patient was dismissed from this ward nine months since, free of present complaint (pemphigus), which, however, returned about a month after dismissal, and has continued since. The vesicles appear in a night, about the size of a pea, and, uniting, form one large vesicle. At first they are filled with amber-coloured fluid, which becomes opaque, scabs, and occasionally ulcerates slightly. At present there are very few in the primary stage, but there are numerous patches of scabs present on the face, trunk, and extremities. General health good. Pulse soft; tongue coated; bowels regular.

Hab. pil. plummer, o. n. *et baln. tepid. Tart. potass. et sod.* ʒij. *q. q. man.*

12*th Oct.*—Symptoms considerably modified; the fresh vesicles are still being developed on the feet and hands; the trunk is comparatively free. The gums are not yet affected by the mercury.

2*d Dec.*—Somewhat improved.

5*th Dec.*—Called to-day; some vesicles appear on the legs; finds the joints stiff and sore with the cicactrices. Received advice to continue the pills, and brush the unhealthy skin with a five grain solution of lunar caustic.

Case 13.—*William Smith, aged* 24, *assistant reporter.* 11*th Nov.*

For the last two months has been affected with an eruption of bullæ, containing turbid serum, which, bursting, become covered with thick brown scabs; these again falling off leave a raw ulcerating surface, which heals after a short time, and leaves a dark-coloured mark upon the skin. The patches are of a circular form, the largest being about an inch and a quarter in diameter, situated on an inflamed base, but having little surrounding inflammation, and not attended with much pain or itching. Patient is of a strumous diathesis, and has several cicatrices of old abscesses in various parts of the body. General health bad; denies ever having had syphilis. Was put upon cod liver oil, and was dismissed by desire on the 20th.

Case 14.—*Ann Malcom, aged* 16, *servant. Eczema Impetiginodes.* 11*th November.*

A fortnight ago, without any assignable cause, observed an eruption on both hands, which gradually extended to other parts, until now the whole surface of the body is more or less affected. The eruption commences in the form of minute vesicles, slightly raised above the surrounding skin; these soon burst, and terminate in desquamation, or become covered over with small red crusts. This affection is attended with considerable smarting and heat of skin; some vesicles, especially around elbow joints, become pustular, and end in thick yellow scabs. The eye-lashes are coming out. Tongue white; bowels regular; pulse natural; skin hot. Previously enjoyed good health. *To have a Plummer's pill every night, and warm bath.*

24*th.*—Eruption has improved, but is now stationary, and again a few vesicles are appearing on the hands. *A table spoonful of cod liver oil, thrice a-day.*

Jan. 2*d.*—Eruption has now assumed a more decided appearance of pustular itch. *Utat. balneo sulphureti potassii et applic. fotus C. sulphur. potassii manibus.*

22*d.*—Omit the cod liver oil, and let her have ten drops of Fowler's solution thrice a-day in water. 28*th.* Complained of nausea and gastrodynia. *Omit the solution.*

Feb. 5*th.*—Dismissed well.

Case 15.—*Ann Bowlin, aged* 18, *unmarried, factory girl.* 12*th November. Eczema Mamillarum.*

On admission, the surface of both mammæ, to the extent of two and a-half inches of the skin around nipples, is covered over with one continuous mass of thick honeycomb-like crusts, of a yellowish-green colour, and situated on an inflamed base. Patient is unable to state minutely how this first originated; but when her attention was first drawn to it, there was a small excoriation on the right nipple, attended with an intense and painful degree of itching. This after scratching became crusted over, and gradually spread until it covered the whole surface now affected. The left breast began shortly afterwards to show symptoms of the disease in a similar manner. Both breasts are considerably enlarged, and in each several indurated masses can be felt. Tongue clean; bowels regular; pulse good strength and fulness. Catamenia have been absent during the last twelve months. Has had no treatment. *App. Cataplasm. lini. part. affect.*

14*th.*—The crusts have now come off, and both breasts present a large rough and indurated inflamed surface, upon which, with the aid of a hand lens, several minute vesicles are detected.

Water dressing. Ten drops of tincture of iron thrice a-day in cold water.

25*th.*—Redness and swelling of mammæ greatly reduced, and no new vesicles appearing.

Dismissed with advice.

Case 16.—*Margaret M'Lauchlan, aged* 21, *factory worker, unmarried. Eczema.*

On admission, the face is considerably swollen, and thickly covered over with thin irregular yellowish crusts, situated on an inflamed base, and accompanied by some severe smarting pain. Numbers of thinly scattered spots, crusted over exist in both arms, and there are one or two patches upon the leg, similar to those on the face. Tongue foul; bowels open; pulse 104, strong. States that the eruption has been on the legs for the last two months, and appears to commence in the form of small vesicles. Is subject to attacks of erysipelas of the legs, and was treated in this house for erysipelas of the legs, with an eruption like the present, about eight months ago. The spots only appeared on the face and arms about five days ago. She has had no treatment.

℞ *Tart. antimonii,* ....gr. iv.
Aquæ................................℥viij. *Solve.*
Hab. ℥ss. *tertia quaq. hora.*

Feb. 4*th.*—℞ *Solut. chlorit. sodæ* ℥vj. *Hab. cochlear. magnum ter in dies. Omit. antimon. et hab. balneum, sulphuret. potassii omn. nocte.*

15*th.*—Had a rigor last night about five o'clock. Pulse quick, skin hot. *Repeat the antimony.*

March 4*th.*—Pulse natural, and has no febrile symptoms. *App. liniment. olei lini cum calce part. affect. Omit the antimony, and resume the chlorite of soda thrice a-day.*

27*th.*—Dismissed well.

Commentary.—This disease, eczema, may attack any portion of the cutaneous surface, and may be produced by constitutional or local causes. It occurs more frequently in females. In Bowlin's case, where the disease was confined to the nipples, the cause was evidently amenorrhæa, and an attempt of nature to relieve vicariously. As a general rule, soothing and corrective remedies internally prove useful, while cooling and sedative means recommend themselves externally.

Case 17.—*James Docherty, aged* 19, *labourer, unmarried.* 8*th March. Porrigo Lupinosa Favus.*

On admission, patient's scalp is covered over with large patches of dry yellow scabs, having a circular form, raised edges, and a central depression; they are about the same size as, and very similar to, lupine seeds. The hair of the head is very thin, and the scalp is bald in several situations where the spots previously existed. The disease is ascribed by the patient to contagion, as it commenced five years ago, shortly after sleeping in the same bed with a boy whose scalp was similarly affected. Tongue clean; bowels open; pulse natural, and general health good. *Linseed poultice to the head.*

9*th.*—℞ *Ungt. Picis.*
— *Nitrat. Hydrarg. aa* ℥i. *M.*
Applicet. capiti.

April 9*th.*—Dismissed by desire.

Commentary.—It has been advanced by some, that the pustular crusts developed in this disease are purely of animal origin; while others recently maintain that they are vegetable parasites. Remak observed them in 1836. Professor Schoenlein of Zurich refers to them; and Dr. Gruby of Vienna gives the following description, in 1842:—"The cup-shaped crust of favus is situated upon a depression of the derma, and is covered by a sheath of epidermis, which is thickest on its concave, and thinnest on its convex surface. Immediately within the epidermis is a thin layer of amorphous substance, composed of minute molecules; this layer is dense, of a sulphur-yellow colour, and forms a capsule, which is in contact by its external surface with the epidermis, and by its internal surface with a fungous growth. The parasitic growth is attached by means of its roots to the yellow capsule, while its stems and branches extend inwards towards the centre of the capsule, and constitute the whitish-gray and porous contents of the crust. The roots and branches of the mycodermis are smooth, cylindrical, transparent tubuli, which divide dichotomously from point to point. The interior of the tubuli is filled with a granular substance, and divided here and there by transverse septa. At the end of the branches are situated the seeds of the plant, which are of a yellowish-white colour, and either collected into an irregular assemblage, or disposed in the form of a garland. The diameter of the branches of the mycodermis is 1-0000 to 1-250 of a millimetre; that of the molecules contained within the tubili, 1-10,000 to 1-1000 millimetre; and that of the seeds, 1-300 to 1-100 millimitre. Dr. Gruby has detected seeds in the follicles of the hair, and impacted in the ducts of the sebiparous glands."

To ascertain the degree of contagious power of the mycodermis, Dr. Gruby inoculated various mammiferous animals, birds, reptiles, and insects, but unsuccessfully; he was equally unsuccessful in his own person, but succeeded after seventy-six attempts in reproducing the mycodermis in a cryptogamic plant. Dr. Bennett of Edinburgh also succeeded in communicating the disease by inoculation. In a crust taken from the head of James Docherty, the features of the Acorion Schoenleini are well represented, and from it I have prepared two microscopic specimens.

The treatment of the disease is difficult and tedious, and often resists many and potent remedies.

Case 18.—*Peter Mᶜ Growrsy, aged* 63, *labourer, married.* 27*th May. Scabies.*

On admission, the posterior surface of both hands and lower third of fore-arms are considerably swollen and inflamed. The integuments are thickened and indurated, and the cuticle is desquamating in thin scabs. One or two small vesicles, filled with turbid serum, are seen on the inflamed parts. The legs are nearly in the same condition, and together with the body are covered with small bloody scabs. This affection began on the trunk about nine months ago, and three months since appeared on the legs and arms. It is attended with great heat of skin and itching, and is ascribed by the patient to contagion, from sleeping in the same bed with another man affected with a similar disease. Tongue covered with a brown fur; bowels regular; pulse 96, good. *Fomentations to the hands and legs. Warm bath every night, and a tea spoonful of sulphur internally.*

Dismissed well on the 25th June, 1851.

Case 19.—*William Fleming, aged* 17, *unmarried, weaver.* 3*d Oct. Scabies Pustularis.*

Nine weeks ago, a small pustular eruption came out upon hands, and soon became general all over body. The vesicles have a thin inflamed base, and are filled with white lymph, the scabs in two days or so forming a round crust, slightly elevated. A large number appear to have united over the hips, presenting a large irregular scab. General health is good. Pulse 90, soft; tongue clean; bowels open. *Hab. balneum tepid. secund. q. q. n.*

℞ *Iodid. Potassii,*.............................. ʒiss.
Aquæ,....................................... ℥viij. *Solve.*
Hab. ℥ss. *ter in dies.*

Oct. 11*th.*—New pustules still appearing on different parts of the body, particularly on the hands. *Omit Iodid. Potass.*

℞ *Sulph. Sublimat.*,............................ ℥j.
Bitart. Potass.,............................... ℥ss.
Syrup. Empyreumat. Q. S. ut fiat Electuarium. Hab. ʒij. *ter in dies.*

8*th Nov.*—Eruption disappearing.

15*th Nov.*—There are still some scabs on the extremities, but no new pustules have appeared for some time. Dismissed by desire.

16*th.*—Returned to-day, a few pustules having begun to appear on the hands and legs, which are rather itchy. General health good.

28*th.*—Dismissed cured.

Commentary.—There is a peculiarity about this affection, which consists in this, that it has been ascribed by some to the effect of a simple virus, by others to the presence and action of an insect (the Acarus Scabiei), while others declare that the insect is an effect and not a cause of the disease. That the insect does exist is now undoubted, but there are many doubts as to its being the originative cause. The graphic description of Raspail, and his very excellent representation in his plate, No. 10, of the insect, leaves no doubt as to its existence. I have not been able to secure it either out of, or in its den, but Dr. Bennett seems to think that he has smothered it there by smearing with hog's lard without the presence of sulphur.

Case 20.—*Charles Blair, aged* 20, *labourer, unmarried. December* 27. *Acute Secondary Syphilis.*

States that about six weeks since he was affected with primary syphilis, for which he took mercury, and the symptoms disappeared, after which his throat became affected. He has at present great difficulty in breathing and of speaking and swallowing; the whole back part of the fauces, including the tonsils, are greatly inflamed and ulcerated, and the greater part of the right velum is destroyed. In the hard palate, extending from the incisors backwards, is a large ulcer covered with a greyish-coloured slough. The upper gums around the roots of the teeth are also ulcerated, and are assuming a sloughy appearance. Pulse 113; tongue covered with a brown fur; bowels costive; breath has a most offensive odour. ℞ *Ol. Ricini.* ℥ss.

28*th.*—Last night coughed up a considerable quantity of blood.

℞ *Bichlorid. Hydrarg.*,...................... *gr. ij.*
Iodid. Potassii,............................ ʒ*i.*
Aquæ,....................................... ℥vj. *Solve.*
Cap. Cochl. parv. ter in dies. App. nitr. argenti faucibus.

31*st.*—Feels throat much easier, and is able to swallow better, but the ulcers are not wearing a better aspect.

2d Jan.—A copper-coloured eruption has appeared over whole of body, which appears to be somewhat of the character of Rupia.

31*st.*—Throat has much improved, and has now taken a healthy appearance; the gums are also much improved and the eruption over the skin is fast fading away. He complains of some weakness and prostration of strength, but pulse is natural and of good strength.

Feb. 12*th.*—Throat is now quite well, and the gums are wearing a healthy aspect. Eruption is almost completely faded.

Feb. 29*th.*—Dismissed well.

Case 21.—*Daniel Campbell, aged* 39, *widower, collier. Tertiary Syphilis.*

States that twenty-four years ago was affected with primary syphilis, accompanied with sore throat. Pain is at present felt in the lower limbs from the gluteal region downwards. He has on the frontal eminence two ulcers: part of the bone is exposed and appears to be exfoliating. There is also another situated on the right side of the back part of the head, somewhat in the same condition. Appetite good; tongue slightly coated; pulse 100, soft; bowels regular.

℞ *Bichlorid. Hydrarg.,*...................... *gr. ij.*
Iodid. Potassii,........................... *ʒi.*
Aquæ,...................................... *℥vj. Solve.*
Hab. Cochlear. Mag. ter ind.

Jan. 16*th.*—Since the last report patient has been slowly improving. The ulcers on the cranium are wearing a more healthy aspect, but the exfoliating bones are not yet loosened.

Feb. 12*th.*—Not much improved since last report, but patient is gaining both in health and in strength. There is as yet no appearance of any loosening of the bones. He still continues to use the iodide of potassium.

March 13*th.*—Dismissed improved.

Case 22.—*George Johnstone, aged* 60, *labourer.* 8*th August. Tertiary Syphilis.*

Twelve months ago first observed small painful swellings in the scalp, which after a certain period burst and discharged their contents. At present there are two or three imperfect cicatrices on the head, which occasionally discharge thin bloody pus, as well as one or two swellings with fluctuation. The probe detects no exposed bone, but passes in one spot for a considerable distance beneath the skin. There are no eruptions on any other part of body. Admits having contracted primary syphilis about twenty-six years ago, but since that time has been in the possession of perfect health. He is of temperate habits. Pulse 96; tongue moist; bowels slow. *Hab. Olei Ricini,* ℥ss.

9*th.*—℞ *Iodid. Potass.,*.......................... ʒiv.
Decoct. Sarsae,.............................. ℥xxiv. *Solve.*
Hab ℥ij. *ter in dies.*

16*th.*—Death.

Sectio Cadaveris.—On attempting to remove the skull-cap, a few drops of healthy-looking pus fell upon the table. The posterior portion of the right hemisphere was in a complete state of disorganization, especially over and in the posterior cornua of the lateral ventricles, and an ounce of pus escaped through the fingers, while supported for a short time in the hand. An additional ounce and a-half was found within the ventricle. The anterior cornu and adjacent structures were quite sound, with scarcely a trace of pus. The left hemisphere and the whole of the cerebellum were also in a sound condition. On examining the skull-cap, which had a considerable portion of the dura mater still adhering, the posterior half of the superior longitudinal sinus, triangular in shape, felt peculiarly hard to the touch, and on making a transverse section with the scalpel, it was found filled up by a mass of firm cartilaginous-like substance, with only a very small opening in the centre, which with some difficulty admitted the point of a probe. It also contained a small quantity of pus. The *Torcular Herophili,* as also both lateral sinuses, were filled with the same substance, which however extended farther in the right side than in the left; in this respect corresponding with the ventricle in which the pus was formed. Several transverse sections of these sinuses were made, and everywhere the same strange appearance was found. No trace of the venous blood which usually flows through these channels could be detected. Its course must have been diverted and a new passage found for its transmission to the right side of the heart.

On further examination, an opening was found through that portion of the occiput which corresponds with the *Torcular Herophili,* easily admitting the probe, and establishing a communication between the hairy scalp and the ventricle of the brain, and allowing a free exit of the pus which was formed there. It will be remembered that there was an opening behind the external ear of the right side, which discharged pus from time to time, and in the intervals healed up more or less. When the probe was introduced here, it could be pushed up without any difficulty to the aperture through the occiput. The lungs and heart were both healthy.

Case 23.—*Elizabeth Boyd, aged* 24, *married.* 24*th Sept.,* 1853. *Rupia Syphilitica.*

States that her general health was good until about twelve months ago, when she got married, and a fortnight afterwards became affected with syphilis, for which she has ever since been under treatment. To-day, on presenting herself at the dispensary for advice was recommended as an in-patient.

On admission her face and head are thickly covered over with dark brown scabs, formed by several layers of a hardened secretion of various sizes and shapes, some resembling small oyster shells, while others are conical and represent the figures of limpets or barnacles. The body and extremities are similarly affected, but the scabs are not so large or numerous, probably from the friction of the clothes rubbing off the secretion as it accumulates. There is an unhealthy purulent discharge from the vagina, but not so much in quantity as when first affected. She complains also of sore throat and difficulty of swallowing, and several ulcers are observable on the tonsils and soft palate. The body is very much emaciated and her general health greatly impaired. Pulse 106; appetite good; bowels costive, and never moved of late except by the aid of medicine. *Hab. Olei Ricini* ℥j *Statim.*

25*th.*—℞ *Potassii. Iodid.,*.......................... ʒijs.
Hydrarg. Bichlorid.,...................... gr. ij.
Aquæ,.. ℥viij. *Solve.*

Cap. Cochear. Med. ter quotid. et applic. solut. nitr. ergenti (scrupulo ad unciam Aquæ Distillat) faucit. noct. et mane. A bottle of porter and a beef steak daily.

16*th October.*—Six ounces of port wine daily were substituted for the porter.

9*th Nov.*—The ulcers that were on the soft palate, &c., are now healed. *Omit Nitrate of Silver.*

20*th.*—Some of the scabs have separated on the extremities, leaving ulcers which are healing very slowly. General health appears good.

℞ *Infus. Gentian. co.,*........................... lb. ij.
Iodid. Potassii,.................................. ʒij. *Solve.*

Sumat. ℥ij. *bis in dies, omit vin. Caustic solution to be applied to the ulcers once daily. Omit alia.*

14*th Nov.*—The scabs are now all off the body, face, head, and extremities, and have left a red, shining, and healed surface. General health is now good and she is very much improved in flesh since her admission. Is anxious to be discharged, and is dismissed cured, with advice.

Elizabeth Boyd was admitted under my care while acting temporarily, and was subsequently a patient of Drs. Weir and Easton.

IX. *Remarks on the Anatomy and Physiology of the Cœcum in Man and Animals.* By ROBERT MACDONNELL, M.B., T.C.D., Fellow of the Royal College of Surgeons, Ireland.

IT is proposed to consider, in the following paper, the comparative anatomy and physiology of that portion of the alimentary canal, whereat the small intestine terminates, and which, with its appendages, constitutes the commencement of the large intestine. Before, however, entering on the examination of the various forms in which this portion of the intestinal tract presents itself to us in the lower animals, it may be well briefly to enumerate its anatomical appearances and relations in man.

The cœcum lies in the right iliac fossa, attached by much loose cellular tissue to the fascia covering the iliac muscle of the same side, and invested in front by a peritoneal covering; it is somewhat wider than the rest of the colon, and measures about two inches in length, its extent being from the vermiform appendix to the junction of the ileum, and great intestine. Its serous covering does not, in general, so completely surround it as to form a mesocœcum; its muscular coat is well marked, and the longitudinal fibres are collected into three strong bands, commencing at the vermiform appendix, and prolonged on the remainder of the colon, dividing into three parts the circumference of that gut which bulges out between them; its mucous coat has not the velvety appearance of that of the small intestine, owing to the absence of villi, its epithileum is of the columnar variety, and the solitary flask-shaped follicles are met with in greater numbers than elsewhere. From the lower extremity hangs the vermiform appendix, varying in length from three to six inches, and not unfrequently provided at its open end with a valve of mucous membrane.

The termination of the ileum is guarded by a very complete valvular apparatus, which usually is quite adequate to prevent regurgitation into the small intestine. This apparatus (the ileocœcal valve) consists of two pieces, which bound transversely the opening of the ileum into the large intestine; the inferior piece is the larger, owing to the obliquity with which the small intestine enters. A duplicature of mucous membrane enters into the formation of each flap of this valve, and a few of the circular muscular fibres of the ileum are also to be found in it; nevertheless, its action seems to be far more of a mechanical than an organic nature, as is shown by the fact of its preventing the regurgitation of fluid, or even air, after being removed from the body.

There can be little doubt that the vermiform appendix is but a rudimentary development of the larger cœca of many other animals, and in this conclusion we are borne out by the fact that in early fœtal life it is of equal dimensions with the caput coli, the progress of its development being afterwards arrested.

Cuvier, from whom so much of our information is derived on such subjects as that now before us, when commenting in his "Anatomie Comparée" on the division of the intestine into large and small, observes, "that in the greater part of vertebrate animals, the intestinal canal may be divided into two very distinct portions, one, generally the longer, of small calibre, often velvety on the inner surface, begins at the pylorus and terminates at the second, which latter, larger and shorter, very rarely velvety on the inner surface, and having most frequently very strong and thick parieties, terminates at the anus."

In accordance with this very general description, we find the intestinal canal of many fishes divided into two portions, the point of division being, however, in general very obscurely marked. No trace of the cœcum of the higher animals is to be found, (for we cannot look on the pyloric cœca of this class as at all analogous,) in short, nothing marks the spot, except in some an imperfect valve of mucous membrane, which, after death at least, is quite insufficient to prevent regurgitation; as, however, there is often a considerable thickening of the intestine at this point, it may be that by the help of muscular action this valve is made to act more efficiently during life. In several of this class the so-called large intestine is the smaller of the two portions, not only in calibre, but is also more delicate in the structure of its parieties, as in the ray for example.

Among reptiles we are informed that the iguana alone has a true cœcum; the rest of this class resemble fish, many wanting entirely even the valvular apparatus, while in others, as in the common frog, this is tolerably well developed.

In our next step, to the class *aves*, we find the portion of the alimentary canal, which we are now considering, undergo a remarkable change. In most birds there are two cœca, opening not very far from the anus; in omnivorous and grain-eating birds, they are long, in the common fowl, for instance, measuring three inches; and while in the diurnal birds of prey they are either absent, or nearly so, yet, it is a curious fact that in those seeking their prey by night there are two large cœca.

In mammalia the cœcal apparatus presents great variety of size and form; even among certain of our domestic animals, from which this portion of gut may readily be obtained for examination, we can easily satisfy ourselves of this fact. Thus, while in the rabbit, the cœcum is proportionally long and large, furnished with a peculiar spiral valve winding round its interior, and becoming small at the extremity, so as to form something like a vermiform appendix,—in the cat, an animal of somewhat similar dimensions, it measures not more than half-an-inch in length. Measuring in the ox 26 inches, in the sheep 16, it is found in large dogs short and convoluted, not exceeding three to four inches in length. There is, in fact, in this class every variety, many wanting both cœcum and vermiform appendix, and having the valvular apparatus alone to indicate the termination of the ileum. Such is the case in some ant-eaters, the sloth, and long-tailed manis, among edentata; in some insectivorous bats, as the vespertilo noctula, in the mustelidæ among carnivora, the dormouse among rodentia; and in, perhaps, all cetaceans, except those in whose stomachs fuci only are found, as the dugong, manati, and rytina. In others we find a cœcum of greater or less dimensions, but existing singly, that is, without a vermiform appendix, as in most quadrumana, the genus galeopithecus among cheiroptera, ichneumons, most digitigrade carnivora rodentia, except the dormouse, the orycteropus among edentata, and in most pachydermata ruminantia, solipeds and mammiferous amphibia, as well as some cetaceous. In the echidna, among the monotremata, there exists only a vermiform appendix without cœcum; while in the phascolomys, orang outang, chimpanzee, the gibbons, and man, both cœcum and vermiform appendix make their appearance.

My space would not admit of going into a detailed examination of the tables given by Cuvier, in his great work already alluded to, of the relative dimensions of the caput coli, as compared with the rest of the intestinal canal, in the different classes of mammalia. I must content myself with drawing from them the following general conclusion, that while in omnivorous and vegetable-eating animals, the cœcum is very large, it is usually very small or deficient in carnivora and insectivora, a fact which has given rise to the idea that this apparatus is to some extent a digestive cavity, like the stomach. The valve which exists in all mammalia at this part of the alimentary canal, is by no means sufficiently complete in general, to prevent fluid from passing in a backward course from the large into the small intestine. In the ox and sheep, where the cœcum is large, water passes readily in this backward direction; as also in the dog, goat, pig, &c., and yet the valve does not seem to be of a more organic nature in them than in man, in whom it is usually quite adequate to prevent regurgitation, a circumstance which first led to its discovery by Gaspard Bauhin, in the year 1579, at Paris. Possibly on account of the erect position of man, a more efficient valve is requisite to prevent a retrograde passage of the contents of the large intestine in him, than in the lower animals. The cavity of the cœcum is in most vegetable-eating animals very uneven, being generally divided, in the greater part of its length, by tendinous bands, which cause bulging of its parieties, and compared with carnivora its diameter in relation to the small intestines is much greater; while the arrangement of the longitudinal muscular fibres in bands is never so marked as in man.

In reference to the function of the cœcum, as forming a portion of the digestive tube, it has been already stated, that its large development in most herbivora, coupled with the observation that the alkaline contents of the small intestine often become acid in the cœcum, have given some foundation to the notion, that the tubular glands of this portion of the gut secrete a fluid somewhat analogous to the gastric juice, and capable in some measure of completing the digestion of such alimentary matter, as has not been elsewhere acted on and fitted for absorption. Since the contents of the large intestine enter it in a semi-fluid state, and pass out of it in a much less moist condition, often in fact in hardened masses, there can be no doubt that absorption of the fluid portion goes on to a considerable extent, during the passage of the fœculent matter through this portion of the intestine; nevertheless, the theory of the cœcum being a digestive cavity is contradicted by the fact, that in many animals, in which the caput coli is large, its contents are usually alkaline or at least neutral, as in the ox and sheep for instance.

"Observing," says Dr. O'Beirne, in the commencement of his work on the Process of Defæcation, "first, that the fibres which compose the muscular coat of the cœcum and colon are so much paler, thinner, and more disgregated, than those which compose the muscular coat of the small intestine, and that numerous cells are formed within the cœcum and colon by means of longitudinal bands; secondly, that the cœcum is abruptly enlarged to a much greater size than either the ileum or ascending colon, that it receives but a partial coat from the peritoneum, for the purpose of favouring its distention, and that it is placed rather above the right os ileum, in order to afford firm support to the matter which may be contained within it; thirdly, that the ascending colon takes a long course directly against gravity, that the transverse arch of the colon takes nearly as unfavourable a course, and that both the ascending and descending portions of the colon are so situated, that compared with the small intestine, they can receive but little impulse from the diaphragm or abdominal muscles; fourthly, that a very long and broad process of peritoneum allotted to the sigmoid flexure, in order also to favour its dilatation; fifthly, that the anus is guarded by a strong pair of sphimeter muscles; observing all these arrangements of nature, we cannot but observe in them so many provisions for retarding the progress of the fœcal matter, and forming the large intestines into a depot for its reception and accumulation." In this view, that the colon, and more particularly its caput, is a sort of vesical reservoir, we are undoubtedly supported by the consideration, that in those animals, whose food necessarily affords much excrementitious matter, this organ is very capacious, while it is small or absent in those whose carnivorous instincts supply them with a less wasteful diet. The sloth forms the only important exception to this general rule, and perhaps the peculiar mode of life of this curious creature, renders such an apparatus less necessary to its comfort, than to other vegetable-eaters; certain it is that without a reservoir of this kind, in many animals, as the ruminants, the process of defæcation would be almost as incessant as that of mastication itself.

X. *Clinical Notes.* By JAMES A. LAWRIE, M.D., Professor of Surgery, University of Glasgow.

STATISTICS OF TETANUS.

(Continued from page 359.)

Pathology.—A careful post mortem examination was made of many of the earlier cases of tetanus, and especial attention paid to the state of the nervous centres and nerves, particularly those leading to the wounded limb. In Vol. iv. p. 90, of the *Glasgow Medical Journal*, the results of some of those examinations were published by Dr. Perry, with the view of showing that inflammation of the nerves at the seat of the injury, and of the nervous trunks connected with it, was probably one of the exciting causes of tetanus. It so happened, however, that I conducted some of these post mortem examinations for Dr. Perry, and subsequent investigations have shown me that, in as far as morbid appearances are recognizable by the eye, and the methods of examination then in use, the nerves of a tetanic injury differ in no appreciable respect from those in which that disease has not supervened. In as far as the nervous centres are concerned, although our examinations fail to confirm Mr. Curling's opinion, that the disease is occasionally caused by inflammation of the brain and spinal cord or their membranes, still they point to these organs as the probable seat of the disease.

The attention of Pathologists having been recently called to the specific gravity of different portions of the nervous centres in acute disease, this method of investigation has been applied by Dr. Aitken to the fatal cases of tetanus, which have occurred in the hospital during this year, and he has kindly favoured me with the following extract from the pathological register:—

Results of the post mortem examination of four cases of tetanus, examined in the Glasgow Royal Infirmary, during the past year, and extracted from the Pathological Register. By DR. AITKEN.

"The examination of cases of tetanus after death, has been attended for the most part with negative results, and any diseased appearances that have manifested themselves to the naked eye, have been of a very inconstant kind. Various regions of the nervous centres, such as the brain, spinal cord, and semilunar ganglia, have been indicated as the seat of local lesion in the disease, because they had sometimes shown appearances of congestion, inflammation, exudation, softening, or induration.

"The following cases of tetanus, examined during the past year, in the Glasgow

Royal Infirmary, have all exhibited one character in common, and have uniformly pointed out the spinal cord as the primary seat of the morbid state, and as the part where lesion is invariably manifest after death. The lesion referred to, however, is not manifest to the eye, but is presumed to exist, and is determined to exist, with certainty and accuracy, by an examination of the specific gravity of the cord substance. For this purpose the cord is separated from its nerves, close to the place where they enter or leave its surface, and is divided into parts of a uniform size, each piece being about an inch in length. These parts are successively placed in fluids of known specific gravity, and their condition compared in the different parts of the cord. The healthty spinal cord, examined in this way, gives a uniform specific gravity of about 1·030, the uppermost inch or medulla oblongata being always two or three degrees higher than the rest of the cord.

"*Case* 1.—D. R., æt. 47, a male, referred to in Dr. Lawrie's table of Statistics of Tetanus, number 48. A wound existed in the scalp, about an inch to the right side of the occipital protuberance. It presented an open, red, and dry surface. An examination of the cerebral cavity showed great vascularity of the pia mater over the cerebral convolutions, accompanied with extensive subarachnoid effusion.

Specific gravity of cerebellum,	1·046
Do. do. of medulla ob.,	1·044
Do. do. second inch of cord,	1·043
Do. do. third do. do.,	1·043
The spec. grav. of the 4th inch suddenly fell to	1·035

which continued to be the specific gravity of the remaining inches of the cord.

"*Case* 2.—A. C., æt. 18, a female, referred to in Dr. Lawrie's table of Statistics of Tetanus under idiopathic tetanus, number 2. An examination of the cranium showed that some increased vascularity prevailed throughout the grey matter of the brain. The heart was firmly contracted. Specific gravity of cerebellum, 1·040. First inch of cord or medulla, 1·038. The remainder of the cord indicated a uniform sp. gr. of 1·035.

"*Case* 3.—P. G., æt. 21, a male. Ragged and sloughy wounds, complicated with fracture of the distal phalanges, existed on the fore and middle fingers of the left hand. The heart was firmly contracted. The mucous membrane of the trachea and bronchia was of a uniform dark red colour. An examination of the cerebro-spinal cavity showed some vascularity of the pia mater of the cord, with an exudation of a red gelatinous fluid, in the cervical region of the cord internal to the theca vertebralis.

Specific gravity of the cerebellum,	1·046
Do. do. of first inch or medulla,	1·036
Do. do. second do. do.,	1·031
Do. do. third do. do., more than	1·031
Do. do. fourth do. do.,	1·031
Do. do. fifth do. do.,	1·032
Do. do. sixth do. do.,	1·032

"The seventh inch suddenly fell to 1·030, and the remainder of the cord was of the same specific gravity.

"*Case* 4.—N. W., æt. 18, male. An extensive burn of the lower limbs was received on the 3d November. Symptoms of tetanus appeared on the 11th, and he died on the 13th. The left ventricle of the heart was filled with a partially decolorized clot, and some semi-fluid dark-coloured blood. Its substance was firmly contracted.

Specific gravity of cerebellum,	1·043
Do. do. of first inch of cord, or medulla,	1·041

"The next seven uppermost inches indicated a uniform specific gravity of 1·036. The specific gravity of the ninth inch suddenly increased to 1·038; the tenth and eleventh inches were 1·037; the twelfth inch 1·038, and the remainder 1·037.

"*Remarks.*—These cases show that the general specific gravity of the spinal cord throughout, is increased in cases of tetanus. They show, also, that a change is suddenly indicated about the region of the cord, which is in immediate communication with the wounded part, and that in idiopathic tetanus the change is uniform throughout. In the first case, where the wound was on the occiput, the uppermost three inches of the cord were of the highest specific gravity, and the difference became suddenly and not gradually manifest at the fourth inch. In the third case, a very marked difference was apparent when the cervical region was compared with the rest of the cord; and the difference was suddenly marked where the roots of the cervical and first dorsal nerves left the cord to form the brachial plexus. The wound was on the fingers.

"In the last case the difference was suddenly manifested in the lowermost part of the cord, corresponding to the region where the nerves were in communication with the lower limbs, which were the seat of the injury.

"None of the cases furnished sufficient evidence of the mode in which death took place. The very firmly contracted condition of the heart, in three of them, might indicate that death had taken place by cessation of the heart's action in the first instance, the consequence of spasm; while in one case, the presence of dark venous blood in the left ventricle of the heart, might indicate asphyxia as the probable mode of death."

It is perhaps premature to offer any observations on this highly interesting extract. The results require to be confirmed by further investigations by Dr. Aitken and other observers, and should they be established, an important step will be made in the hitherto barren pathology of this mysterious disease. Meanwhile it is well to refrain from any speculation as to the nature and causes of these remarkable changes in the density of portions of the medulla spinalis.

Treatment.—On this important part of our subject we naturally turn, in the first instance, to the cases of recovery. I subjoin a short abstract of those which occurred in Glasgow.

The second case in the table belongs to this class. It occurred in May 1802, in a ploughman 23 years of age, caused by a bruise on the leg by a horse's foot, exposing the bone. The symptoms did not show themselves till twelve days after the accident, and although the muscles of the jaw, neck, back, and abdomen were all implicated to the extent at times of complete opisthotonos, they were more paroxysmal and more under the influence of mental impressions than tetanic spasms usually are. The pulse was never much above 100, and the symptoms lasted with greater or less severity for thirty-five days. The treatment consisted of the free use of porter, of which he took six, seven, or eight bottles in the twenty-four hours, for many successive days, and of opium, in doses of two grains every two or three hours, during the same period.

This case was obviously subacute, if not chronic. The circumstance of his being able to *swallow* porter, in such quantities, is alone sufficient to prove this. As it stands, it is in favour of the stimulant and narcotic plan of treatment.

The second recorded case of recovery is that of D. Hunter (case 12), æt. 45, a robust, and previously healthy, ploughman, caused by laceration of his left little finger by an iron hook. His pulse never rose above 110, and seems generally to have ranged from 80 to 90 or 100. The muscular spasms must have been general and severe, as he is described as being lifted by an arm and leg, like a block of wood; but still, the very full reports given of the case do not leave on my mind the impression of its having been very acute. The arms were never affected. The stools were for days as black as tar. The treatment was diametrically the reverse of the last case. He was bled from the arm to seventy ounces, his whole spine was freely blistered, and the raw surface dressed with tartar emetic ointment and turpentine liniment. He was purged most freely, and had a warm bath for an hour, at least twice daily, for many successive days. The only opiate was eight grains Dover's powder, every hour, for four hours, on the 27th Jan. I have often heard this case quoted as an example of the good effect of free counter-irritation along the spine, but a careful perusal of the daily reports suggests to me the query, would not this man have done equally well had his treatment been restricted to purgation and perfect quietude? It is important to contrast it with the next case (13) in the table, which was bled from the arm to forty-two ounces, cupped and blistered along the spine. This man, of the same age, only lived two days in the hospital; the report on the 30th July being, "Got gradually worse after the loss of eighteen ounces of blood, the spasms becoming much more frequent and severe in their attacks. *Died* two hours subsequent to the bleeding."

There can be no doubt that the supposed successful treatment of case 12 suggested that pursued in case 13. How different were the results! Let it be remarked, however, that the pulse, in case 12, ranged from 80 to 100, whereas in case 10 it was 112 on the day of admission, and 120 the day following.

Case 21.—Mary M'Luskie, aged 30. The symptoms did not show themselves for at least thirteen days after the laceration of the fingers by machinery. She was not admitted into the hospital till eleven or twelve days thereafter. The symptoms then were very mild. The fore finger could be insinuated between the teeth. She swallowed cold liquids greedily, and with little if any difficulty. She spoke in a strong clear voice. Pulse 80. She was bled soon after admission to eighteen ounces, during which the spasms returned, recurring afterwards every two or three minutes, but only momentarily. Pain on pressure over vertebræ between shoulders. Right arm forcibly extended during paroxysms.

This case evidently belongs to the chronic or subacute form of the disease. The treatment was actively antiphlogistic and antispasmodic, consisting of bleeding from the arm to eighteen ounces, forty leeches between the shoulders, a blister from the nape of the neck to the loins, dressed with savine ointment, free purgation with salts and tartar emetic and croton oil. Thereafter five drops of prussic acid every hour or two hours, and ultimately opiate enemata.

Case 28.—Brian M'Ginlay, aged 24, labourer. April 1842. This case was obviously subacute. The pulse is never recorded above 84, and although paroxysms are mentioned, and reported 12th Oct., as "rather more frequent and severe," still, when we turn back to the report of the 10th, and read that "contracted state of abdominal muscles has occasioned slight twitchings," we must conclude that they never were really severe. The treatment consisted of a blister from nape of neck to loins; free purgation, calomel and opium; hemlock poultice to wound.

Case 29.—*April* 10, 1842. Arch. M'Laren, æt. 26, weaver, married. Lacerated wound of perineum and scrotum, from fall on sharp spike when intoxicated. Accident happened on 8th April, was admitted on the 10th.—Wound was clean, having thrown off sloughs. On 20th.—It is reported that he had symptoms of incipient trismus for two days without mentioning them. There were no general tetanic symptoms. Pulse 82. He was put upon infusion of digitalis, in half-ounce doses, every two hours, and kept steadily under its influence for many days. The quantity taken exceeded thirty ounces. Five or six days elapsed before so much irregularity of pulse was observed as to require the digitalis to be intermitted. The pulse, however, was slow, varying from 40 to 80. The tetanic symptoms, although throughout mild, appear to have been at their worst on the 26th April, or eight days from their accession. The report states "tetanic rigidity extends along whole spine, occurring in paroxysms, with intervals of five or fifteen minutes." This case must be ranked among the subacute. The pulse never reached 100. The influence of the digitalis on the pulse was very unequivocal, but probably that very influence arose from, and was indicative of the mildness of the disease.

Would this patient not have done as well under mild purgation, quiescence, and nourishment?

Case 40 was one of trismus from extraction of two teeth, and requires no particular notice.

Individual Remedies.—1. *Bleeding.*—Of our Glasgow cases, 11 were bled, of which 2 recovered and 9 died. Although in the two recoveries, cases 12 and 21, it may be supposed to have done some good, in other cases it seemed to do such manifest mischief, that abstraction of blood ought to be discarded from the treatment of acute tetanus. I never in my own practice bled a tetanic patient. They died soon enough of exhaustion, without the aid of loss of blood. The same remarks apply to cupping glasses and leeches.

2.—*Purgatives.*—With few exceptions, all our Glasgow cases were purged, and, from them consequently, no comparative inference can be drawn for or against their use. My own impression, however, is, that indiscriminate continuous purging cannot be too strongly condemned. If seen early, the symptoms not intense, the patient able to swallow, and to bear the fatigue of purgation, it is right, as a general rule, to empty the bowels. But, that purging will cure tetanus, I do not believe; on the contrary, I feel certain that it is often directly injurious. Much has been said of the tar-like character of the stools in tetanus: from my own experience, I should say that it is much less frequent than was at one time supposed, and its connexion with the tetanic spasm is, at least, problematical. I should look upon it rather as a good symptom, from the fact, that several cases in which it was observed recovered.

3.—*Opiates.*—With few exceptions, all our Glasgow cases got opium, some in very large doses, adding another to the already accumulated proofs, that it cannot cure tetanus. Tetanic patients are proverbially tolerant of opium; and heterodox as the opinion may be, I do not believe that any medicine, of which the disease is absolutely tolerant, will prove to be curative. I am aware that I may be met with the effects of tartar emetic in pneumonia. But besides that the tolerance of that medicine is, in any case, very rare at first, and very seldom continuous, it must always require a large and unequivocal amount of experience to prove that a medicine, which, in any disease, fails to exhibit its natural physiological effect, can be acting therapeutically. Unquestionably, no such curative relation has yet been established between opium and tetanus. Are we then to discard opium? In heroic doses, I answer yes. If in drachm doses, especially by enema, three or four times daily, it fails to do good, increasing the dose five or tenfold, will, I am satisfied, prove equally useless.

4.—*Cannabis Indica.*—I can find no proof that any of our Glasgow cases were benefitted by this medicine. A case related by Professor Miller of Edinburgh, with several others, goes far to prove that it is one of those medicines of which this disease is tolerant, and, if I am correct, it will not be curative. In Professor Miller's case, the symptoms were believed to increase when the medicine was omitted, or its dose decreased, and to be alleviated when it was repeated. On this statement, with all deference, I am not disposed to place much reliance. Any one who has watched the natural course of tetanus, not interfered with by medicine, must have observed the frequent recurrence of exacerbations and remissions, without any appreciable cause, which, had a powerful medicine been in the course of exhibition, might very readily have been set down to its influence. There are few cases in which "*post hoc propter hoc*" is more likely to mislead us.

To the same class, if I mistake not, aconite will be found to belong. Prussic acid, I believe to be dangerous, and ought to be discarded.

5.—*Digitalis.*—Case 29 recovered under the use of this remedy. But that case was certainly not acute, and the good effects of the digitalis were at least very problematical.

6.—*Tobacco.*—Highly extolled by the late Dr. Anderson, Dr. O'Beirne, and others, it has never been a favourite remedy in Glasgow. It was given in cases 11, 39, and 40. The two first died, the last, one of trismus, recovered. Of the published cases 21 were treated by this powerful drug, of which 11 recovered and 10 died. Notwithstanding this evidence in its favour, I must say (it may be without sufficient experience) that I consider it a dangerous medicine, quite as likely to do harm as good, and peculiarly unsafe in the intensely acute forms of tetanus.

7.—*Strychnine* was given in one case only (24), and as might be anticipated, the result was not encouraging. The symptoms appeared aggravated, and the patient died after 36 hours' illness, in a convulsive paroxysm of excessive severity.

8.—*Chloroform* and *Ether* were exhibited by inhalation in nine cases, all of which (except case 40, trismus) died. Our Glasgow experience thus proves that these anæsthetics will not cure tetanus. In private practice I have given chloroform a full trial, having kept a boy, from the time I first saw him, till within a few hours of his death, a period exceeding twenty-four hours, continuously under its influence. Its first effect, in that case, was truly marvellous. A boy, about 12, suffering intense agony, under well-marked opisthotonos, had almost instantaneously his muscles completely relaxed, his sufferings annihilated and exchanged for a tranquil refreshing sleep. The subjoined reports from my friends, Dr. J. Grieve, and Dr. Geo. Buchanan, who kindly assisted in watching the case, will show that the chloroform kept off the spasms, but did not retard, if, indeed, it did not accelerate, the fatal result:—"Patient was under my charge from 11¾ A.M., to 2 P.M., and during this time one ounce of chloroform was exhibited. His respiration was natural and free from stertor; pupils contracted; pulse continued regular, was 140 at 12½ P.M. and at 2 P.M. About 1¼ P.M., patient, who has been lying on his side, was turned on his back, and remained in that position; at the same time he got an injection of half a tea cupful of beef tea and port wine, with twenty drops of laudanum. No spasmodic attack occurred.—J. G."

"At half-past 2, patient was completely under the influence of chloroform, breathing easily, but rather more rapidly than natural. Pulse 140, of fair strength. At this time the catheter was introduced, and about a pint of urine drawn off. While the instrument was in the bladder, a slight spasm occurred, principally of the abdominal and pectoral muscles, but an additional dose of chloroform being administered it immediately disappeared. The urine was rather high coloured, but was not examined chemically. At 3 o'clock, an enema of beef tea and one ounce of port wine, with twenty-five drops of laudanum, was given. Pulse, at this time, 160. Towards 4 o'clock, respiration became more laboured, and chloroform was exhibited sparingly. The pulse, also, got very rapid and irregular, so that it was almost impossible to count it. The skin, up till this time, was dry and hot, but now, especially the face and chest, began to get cold. The lips became bluish: the pupils contracted; and, presently, the respiration became so difficult and interrupted, that chloroform was intermitted for ten minutes at a time, and, towards 5, when I left, was almost discontinued. No spasm occurred the whole time, except that mentioned on the introduction of the catheter.

"The amount of choloform used was one ounce.—G. B."

In another case, more fully detailed at p. 485, a boy, about the same age, struggled so much during the early stage of its exhibition, that it was laid aside after a few trials

Are we never to give chloroform in tetanus? My experience would lead me to reply, as a palliative only, in intermitted and not very large doses. At times it gives such immediate and great relief, that some patients beg, almost implore, its exhibition; but the result of the case above detailed, would deter me from keeping a tetanic patient fully and continuously under its influence. Its effects in the case of hydrophobia, which I recorded in the *Edinburgh Monthly Journal* for September, 1852, much resemble those noted by Drs. Greive and Buchanan, and perhaps I may be allowed to add its influence in a case of acute chorea,* in which it was exhibited, at my suggestion, by Dr. Weir, tend to show that in a full dose it is not well adapted for acute persistent spasmodic disease. That patients may be kept under its influence for a period far exceeding twenty-four hours, and with beneficial results, is well known. I kept a lady, affected with acute puerperal mania, almost continuously under its influence for eight days. The recovery was complete.

I have said that chloroform should be exhibited with caution in cases of tetanus. In order to carry out this recommendation the utmost attention must be paid to its effects on the muscular system, as well as upon the pulse and respiration. And here I cannot forbear from entering my solemn protest against recent assertions, that chloroform has no effect on the action of the heart until respiration has ceased, and that attention to the state of the pulse may mislead, but cannot guide us in its exhibition. No doctrine, so far as my experience goes, is more opposed to truth. There is no vanity in my saying that I have exhibited chloroform in all forms of surgical disease, in obstetric, and in medical cases, as frequently perhaps as any one in Scotland, and hitherto without any fatal result; but in no instance have I permitted the finger of an experienced assistant to be for one instant removed from the patient's pulse. In my experience, the pulse has been a safe, an almost unerring guide. The state of the breathing must also be sedulously watched; but surely there is neither difficulty nor contradiction in the assistant, who has charge of the chloroform, keeping his finger on the pulse and his eyes on the chest, carefully noticing at the same time the condition of the muscular system.

---

* Glasgow Medical Journal, vol. i., p. 88.

9.—*Quinine Tonics and Stimulants.*—In a well-known case (31 in the published table), Dr. Bright gave quinine in doses of 12 and 15 grains every two hours, until in 11 days an ounce and a-half were taken. On this case Dr. Bright remarks, page 118:—"It is scarcely to be supposed that perseverance in the use of tonic remedies * * * during which the patient took nearly two ounces of the sulphate of quinine * * * could have failed to produce some powerful effect upon the constitution." But is it not more probable that this case shows that quinine, in cases of tetanus is absolutely inert, and that it adds another to the many cases already on record, in which powerful remedies given in enormous doses, have been set down as the causes of a recovery, in effecting which they exerted not the slightest influence? We now know that large doses of quinine are not tonic, but powerfully sedative. Fifteen grains every two hours, would probably destroy life even in the strongest man, and if in Dr. Bright's case it acted at all, it must have done so as a sedative and not as a tonic. Of the Glasgow cases stimulants formed an essential part of the treatment in five, and an accessory part in three others. All died except case 2, in which large quantities of porter were consumed daily. The remark already made regarding it, appears nearly equally applicable to Dr. Bright's case, that the power to swallow 15 grains of quinine every two hours, was sufficient proof that it was at least subacute.

I must, however, carefully guard myself from appearing, by these remarks, to speak lightly, much less to scoff at the tonic and stimulant plan of treatment. On the contrary, in the present state of our knowledge, it appears to be at once the most rational and most important. Whenever the patient can swallow, without inducing spasms and aggravating the disease, he should be liberally supplied with soup, milk, quinine in tonic doses, and porter, wine, and spirits. But unfortunately the really acute cannot swallow nourishment or stimulants in quantities sufficient to be of much use. In these, the same remedies must be exhibited by the rectum in as large and frequently repeated doses as the bowels will retain.

10.—*Baths* of all kinds, hot, cold, plunge, and douche, were freely tried, and in no acute case with the slightest advantage. On the contrary, in more than one instance death followed so rapidly, on removal from the bath, as to lead to the conclusion that it had no small share in its sudden accession. In my own practice I have laid them entirely aside, the cold as dangerous, the warm as injurious, from the movement and fatigue which they necessarily involve.

11.—*Amputation* was performed in five cases—all were fatal. Case 9 of table, spontaneous gangrene of the lower limbs, in a girl, (Flora Campbell,) aged 17. The gangrene commenced 26th May, 1814, tetanic symptoms appeared in 14 days (10th June), amputation was performed below the right knee on the 12th. She died at 9 o'clock the same night. Case 11—little toe amputated. Cases 19, and 45, fingers amputated without relief.

Case 42 deserves to be recorded as an instance of amputation, before and after the appearance of tetanus.

William Harris, æt. 29. *April* 7, 1849.—Eight days ago, third finger of right hand bruised and lacerated. At present third phalanx is exposed, and surrounding textures in a state of gangrene.

Finger was amputated to-night, at second phalangeal joint, and flap taken from under surface of that phalanx. Adhesive plaster and bandage applied. General health good. *Six ounces of black draught.*

April 13.—Flap united, wound healthy—*dismissed well.*

April 16.—Re-admitted. Complains of pain and stiffness in neck and lower jaw. Pain in finger, passing thence to back. Can only half open mouth. Opisthotonos, rigidity of abdominal muscles. Difficulty in deglutition, perspiration. Wound in finger looks well. No pain there or in arm.

Consultation called, and recommended amputation of finger at metacarpo-phalangeal joint, the frequent administration of chloroform, and large doses of quinine internally. Amputation was performed as recommended, the head of the bone being removed. *Six grains sulphate of quinine every third hour.*

April 17.—Spasms have increased in severity. Thinks himself relieved by chloroform; has always a severe spasm after coming out of the anæsthetic state; increased difficulty of deglutition; had a very severe attack at 5 o'clock this morning. *Increase the dose of quinine to twelve grains. Two drachms laudanum by enema, cupping glasses to spine, and afterwards vesication by boiling water.*

9 P.M.—Difficulty of deglutition increased; had a sleep of about three quarters of an hour's duration, during which jaw was relaxed. Actual cautery was applied to nape of neck.

April 18.—Had a very severe spasmodic attack at 4 o'clock this morning, in which he died.

I believe I speak the sentiments of all experienced surgeons, when I say, that amputation will not cure tetanus, while it not unfrequently causes it. Apart from experience, there is this theoretical argument against it, that unless it can be shown that tetanus is a local disease, a measure so severe as amputation is more likely to do harm than good. If lesion, superficial or deep, is the primary or more permanent exciting cause, amputation, it must not be forgotten, is merely the substitution of one wound for another, in many instances larger and more severe than the injury, for whose removal it was performed. In case 47, tetanus supervened in twelve hours after amputation of the leg, and in twelve more the patient was dead. Nearly the same objections, both practical and theoretical, apply to nervous isolation of the injury, section of the nervous trunks leading to it, and incisions of the surrounding soft parts.

12.—*Applications to the Spine.*—The successful result of case 12, in which counter-irritation was applied to the spine, almost to the extent of torture, made this remedy a great favourite in our hospital for many years. Although on pathological and theoretical grounds favourable anticipations might be formed regarding it, they are not, I am sorry to say, borne out by experience. If cupping, leeching, blistering, cauterizing, and the application of ice to the spine, could cure tetanus, our Glasgow table ought to show a low rate of mortality, for in no hospital in the world can they have had a fairer trial. Their failure has proved so signal, that at present they are almost entirely laid aside.

Tracheotomy.—The idea of opening the larynx or trachea in cases of tetanus, when asphyxia is a prominent symptom, is not new. Many years ago, I strongly urged it upon a patient who would not submit to it, till the last fatal paroxysm set in; she was dead before the operation was finished. So far as I know, my friend and colleague, Dr. A. Buchanan, was the first to perform it as a curative in the earlier stages of the disease, without reference to the urgency of the dyspnœa. I performed it in case 47, but the disease was too acute and rapid to hope for benefit from any remedy. It was had recourse to by Dr. Buchanan in case (50), Lamont, a powerful seaman, while his strength was still good. He seemed much relieved, the spasms did not appear to extend below the opening in the larynx, and for some hours hopes of success were entertained, but death occurred on the second day. My friend and late colleague, Dr. Hunter, opened the larynx in a case which occured in the hospital since the table was drawn up. The case was very acute, deglutition and respiration being very difficult. The operation seemed to succeed to the extent of enabling the patient to swallow with comparative ease, but in no other respect was it even palliative. I sat for some time beside the poor man, soon after the operation, and next day not long before his death, and never witnessed greater agony. He died in about twenty-four hours after the performance of the operation.

So far as we have yet gone, the hopes of the learned and ingenious proposer of the operation have not been realized.

It may be asked if, as the preceding summary would appear to show, no remedy yet tried has done good, and many have done harm, how are we to treat tetanus? I reply, negatively; put the patient into a dark room, keep him absolutely quiet, don't torture him with remedies proven to be useless, give him as much nourishment as he can swallow, and trust the result to the powers of his constitution. If the spasms are severe, alleviate them by chloroform.

Still, I do not despair that a remedy will be found, if not adequate to cure the disease, yet powerful enough to enable us to "fight against death," until the chronic stage is established, and the result can with some confidence be intrusted to nature. Such a remedy I would look for among the anæsthetics. The discovery by Mr. Richardson of the virtues of the Lycoperdon Proteus, encourages the hope that many substances in the vegetable and mineral worlds will yet be found, possessed of powers analogous to those of chloroform, but so far different as to make them curative in cases in which that wondrous agent is only palliative, if not at times injurious. Unfortunately, chloroform excites tetanic spasms, and interferes with and arrests respiration and circulation. Shall we ever discover a remedy which will relax and never excite spasm, and continuously deaden pain without causing pulmonary or cardiac congestion? When we do, I shall hope that tetanus may be cured.

In the meantime, as an encouragement to lay aside medicine and trust to nature and mild nourishment, I shall shortly relate the following case:—

——— ———, aged 12, October 8th, 1853, was amusing himself with some of his companions shouting at a marriage party. The bridegroom being irritated, threw a collier's boot among his tormentors, the heel of which struck this boy on the face. The skin was not wounded, but the bones of the nose were broken, and on the 13th, they were partially replaced by my friend, Mr. Tindal. On the 22d, fourteen days after the accident, and nine after replacement of the bones, tetanic symptoms appeared. I saw him on the 23d with Mr. Tindal, and found the pulse from 115 to 120, the lower jaw, face, and neck rigid, abdomen tense, with acute diaphragmatic pain. Purgatives, followed by small doses of Dover's powder, had been given. I proposed that the opiate should be omitted, that the violence of the spasms should be met by inhaling chloroform, and that infusion of digitalis should be freely given. The chloroform acted well, but he struggled against it, and did not like it; of the digitalis he had four ounces, and then refused to take more; purgatives would not act. Under these circumstances, at our visit on the 28th, we agreed to lay aside all medicine, to open the bowels by occasional enemata, to keep him quiet and give him as much milk as he chose to swallow. To avoid multiplying details, it is sufficient to say that for eight days the paroxysms recurred with great severity every twelve or sixteen hours, at times almost threatening immediate death; he had a troublesome cough with considerable expectoration, but otherwise he breathed easily, and swallowed well. He constantly kept a small wedge of wood between his teeth, notwithstanding which, the spasms of the lower jaw were so severe as to force out four of the incisors. He drank milk freely and without difficulty through a quill. He is now quite well. Cured by milk!

XI. *On the Nature and Importance of Clinical Surgery*,—being the Substance of a Lecture, Introductory to a course of Clinical Prelections. By Robert Hunter, M.D., one of the Surgeons to the Royal Infirmary, Glasgow.

Gentlemen,—I have met you to-day chiefly for the purpose of directing your attention to those interesting cases of injuries of the head, which we have just now visited. But as it is, our first *re-union* this session for clinical purposes, a few preliminary observations on the nature and importance of the study on which you are about to enter, may not be inappropriate or useless.

In our extensive and excellent Infirmary the surgical wards alone, as some of you must know, can accommodate rather more than one hundred and fifty patients. These are placed under the care of three acting surgeons, to whose practice you have free access. As the clinical lectures are delivered exclusively by the two senior surgeons, the wards under the charge of the junior surgeon are open for patients less adapted for clinical instruction. Undue pressure is thus taken off the clinical wards, and a useful selection permitted of the best cases for the clinical lectures. We are thus favourably circumstanced for carrying on the important work of teaching clinical surgery, and it will be the duty of my esteemed colleague Dr. Buchanan, and myself, to turn the favourable opportunities we enjoy to your advantage.

In the extensive field of observation which this hospital thus supplies, we have ample scope for investigating surgery in its various practical bearings, and of testing the correctness or proving, it may be, the insufficiency of the doctrines inculcated in the schools. The practical lessons given here will not supersede the systematic courses of surgical lectures delivered in the seats of learning. These lessons or courses of clinical instruction are instituted for higher practical purposes than can be reached by ordinary surgical lectures,—for confronting practical results with theoretical speculations, and thus making practice the touchstone of theory.

In the lecture-room, surgery in its widest acceptation is brought under your view. It is there taught both as an art and as a science, and its simplest elements are there explained as well as its more abstruse principles. But the surgery taught in the hospital is purely of a practical cast, and not even that kind of practical surgery taught in the class-room. In the hospital we have the practice itself, pure and unadulterated; in the class-room the mere description of the practice. The one is therefore demonstrative, the other only descriptive surgery, and I need hardly say that the ocular demonstration of disease or of practice, is infinitely more valuable to the student, than any mere descriptive statement enunciated even by the most gifted.

> Segnius irritant animos demissa per aurem
> Quam quæ sunt oculis subjecta fidelibus et quæ
> Ipse sibi tradit spectator.

The surgery taught here is usually denominated *clinical*:—a term which expresses nothing in regard to the special nature of our inquiries, but etymologically refers to the bed in which the patient usually is found, and indicates in a primitive manner, by a reference to this expressive symbol, the practical character of our hospital studies.

By lectures on Clinical Surgery, we must understand such prelections, explanations, and statements regarding the surgical cases as may be made at the bed-side of the patients, or with the patients under our immediate observation. Clinical Surgery is therefore practical surgery in a pre-eminent degree. Not that it excludes altogether theoretical considerations or the reasons upon which our practice is founded, for the hospital surgeon must not be degraded into a mere operating or cutting machine. In no department of the profession is discrimination and sound reasoning, as well as extensive knowledge, more required than in the practice of surgery. That practical surgery has a reference to the use of the knife merely, is a common but erroneous idea. Though a very important, it is only a small part of the duty of the practical surgeon. His first duty is to save, not to cut off or mutilate, and to follow out with effect this conservative purpose, he must obviously know more than operative surgery. He must be especially acquainted with pathology and therapeutics. The best practical surgeon is he that *cæteris paribus*, performs the fewest mutilations. The knowledge required to mutilate, or to operate *secundum artem*, as we should say, is at best mechanical, and worthy of little commendation. But he who saves a limb which others could only cut off, displays higher intellectual powers, a more extended knowledge of the resources of his art, and gains a victory far more glorious and infinitely more to be envied than all the éclat, at best evanescent, which the most brilliant performance of such mutilations can ever confer.

Clinical Surgery, as I have said, is eminently practical. Standing, as we are supposed to be, at the bed-side of the patient, no time is afforded for discussing theoretical questions. These, however, are supposed to be known, and not obtruded, except on rare occasions, upon your observation. Hospital surgical practice, in its widest range, may be said to include hygienic, dietetic, pharmaceutic, as well as the proper chirurgic management of the patient; because the treatment of any surgical case, from its commencement to its termination, necessarily includes points connected with all these departments of science. Who can doubt, for example, that cleanliness, ventilation, a genial temperature in the wards, and a comfortable bed, conduce to the cure of all manner of diseases? and it is equally certain that even in pure surgical diseases, dietetic and pharmaceutic means are powerful and indispensable adjuncts to the cure. You will find these facts verified in almost every case that comes before us. We are indebted to the late Mr. Abernethy for bringing this subject so prominently before the profession, and in his work on the constitutional origin and treatment of local diseases, the correctness of the principle now referred to is maintained and demonstrated. So strongly impressed am I with the truth of the general principle inculcated by Mr. Abernethy, that I verily believe if the requisite attention were paid to hygienic, dietetic, and pharmaceutic means, one-half of our surgical cases would be prevented, and nearly the other half would be cured without surgical interference. But such is at present not the case, and as these halcyon days have not yet arrived, we must be content with the present order of things. Surgical diseases, it is to be feared, will ever be amongst us, some the result of accident, others of ignorance, many of crime, and not a few the effect of pathological causes, over which we have little or no control. So long as these causes are in operation, surgical diseases cannot be few, and it behoves us therefore to prepare ourselves for affording an effective aid in the alleviation, cure, or eradication of diseases which, even in the most favourable circumstances, cannot altogether be prevented.

In my clinical prelections I shall confine myself in a great measure to the *practical management* of the cases that come before us. I shall exhibit and explain the various apparatus or means employed in the treatment of surgical diseases, and indicate the best methods of using these means or performing the various operations.

The armoury of the surgeon, though now furnished with less complex contrivances than in former times, yet contains many useful and valuable instruments. As these, however, must be viewed as the tools of the chirurgical workman, and cannot be dispensed with, you should train yourselves in an especial manner to their use: for practice here, is of the first importance. These surgical appliances may be said, in a general way, to include bandages, splints, plasters, tourniquets, ligatures, cauteries, cutting instruments—as needles, lancets, knives, scissors, saws, and various other mechanical contrivances adapted to some peculiarity of structure in the parts effected, or appropriate to the nature of some disease or accident. Among these last, I may refer to cutting pliers, gouges, probangs, forceps, bougies, catheters, &c. &c.

I have said that the surgery taught here will be eminently practical, and the display of instruments and mechanical contrivances on the tables before us, ready to be brought into requisition in the time of need, cannot fail to impart a lively idea of the fact. But in our lectures on clinical surgery, more will be taught than the mere use of surgical instruments. If clinical surgery could lead no farther than this, it would at best be barren and unprofitable. But it leads to more important results,—to the practical discrimination of diseases, not only of those which, though essentially different, are liable to be confounded, and in which an error may be fatal, as the mistaking of hernia for hydrocele; but, also, to a more minute discrimination, as between diseases of the same kind, or species which differ in nicer shades of distinction only, as the different modifications of the same species of ulcer, or the different kinds of dislocation of the same joint.

To form a correct diagnosis, is admitted to be the most difficult part both of practical medicine and surgery. No reading, no closet study, no attendance upon surgical lectures, no natural sagacity even, can confer this power. For the attainment of this indispensable requisite of successful practice, the student must be first well grounded in anatomy, physiology, and pathology, and then he must still farther learn, by repeated observation and careful comparison of similar cases of disease in the living subject, to appreciate those essential peculiarities or differences of structure or function, on which a just diagnosis in every case depends. One of the chief ends of clinical surgery is to teach the diagnosis, and where can the subject be investigated or taught more satisfactorily than in the wards of an hospital?

There is a minuter kind of discrimination than that to which I have referred, which clinical surgery is also calculated to foster and cherish; I mean the practical investigation of the symptoms of disease. By close and sustained observation, by watching the daily changes in the expression of surgical diseases, and by learning the value of these expressions or symptoms, the student is led to cultivate a minuteness of observation which necessarily leads to accuracy of knowledge, to profound views of the workings of disease, and ultimately to important practical results. The power of minutely observing, and accurately discriminating disease, is to be obtained only by great labour. You must both observe and think for yourselves. To turn hospital attendance and clinical prelections to the best account, you should be observant of every case, and note more especially the daily progress of every *important case* that comes before us, and its results.

As the object of this course is to teach surgery by examples rather than by precepts, our descriptions of disease will neither be extended nor systematic. We shall dwell rather on the essential and leading features as regards symptoms, diagnosis, prognosis, and treatment; and when death occurs we shall not omit the opportunity of searching out the cause, and elucidating the nature of the disease by post mortem investigations. In this part of our inquiries we shall have the active co-operation of our excellent curator, whose duty it will be to perform the essential part of each inspection, and to note down the morbid appearances in a book of reference kept expressly for the purpose. These dissections, as far as practicable, will be made in the public theatre here (to which all of you have access), and will thus form another important practical feature in our course of clinical instruction.

In short, the surgery taught here will throughout be of a practical character, or adapted to the wants and daily requirements of the surgical practitioner. We shall in each case give the *name* of the disease, and cause the same also to be noted on the card affixed to the bed of the patient, for easy reference.

In the history of each case, drawn up by the clerk, the *symptoms* and *phenomena* of the disease at the time the patient is admitted into the hospital will be carefully recorded, and the various *changes* that may arise, will from time to time be adverted to, at the bed-side of the patient, and noted also in the Journal, and our reasons for every change in the treatment will be given at the clinical lecture.

When the case leads to a surgical operation, we shall in such circumstances direct your attention:—1st, to the preparatory measures that may be required; 2d, to the successive steps of the operation, and the reasons for adopting one mode of procedure rather than another; and 3d, to the after treatment, in which the diversified plans of dressing and bandaging, in all their varieties, will naturally come to be exhibited and explained.

The office of hospital surgeon, complicated as it is here with clinical teaching, is fraught with no small responsibility. I am conscious of the full measure of that responsibility; and while I shall ever aim to fulfil, in a creditable manner, the duties appertaining to my office, I well know that I shall not fail to receive from you, that considerate indulgence which the arduous nature of my duties here demands. I shall uniformly treat you with that candour becoming your position and your prospects, as students like myself, of the same science—as prospective labourers in the same vineyard. If I make a mistake I shall be the first to admit it, that you may profit by the mischance or misadventure.

In return for this frankness, on my part, I shall expect you to conduct yourselves like young men of sense and education. That you will do or say nothing in these wards that can hurt the sensibility of the most delicate patient. When assembled in the operating theatre, that your conduct will be marked by a strictness of propriety becoming the seriousness of the occasion. That you will neither, by expressions of applause or disapprobation, give vent to your feelings, which cannot but tend to affect the equanimity of the operator, and may even disturb the patients in the neighbouring wards. In a word, I shall expect that on all occasions you will show by your exemplary demeanour, you are deserving the character both of students and of gentlemen.

Having made these general preliminary observations, let us now glance at the nature of the cases we have just now visited. In the wards, which it is my duty to superintend, there are forty-two cases at present, but by new admissions the full complement will, no doubt, soon be obtained. Of these forty-two cases, diseases of the osseous and articular systems, form the large proportion of two-thirds of the whole number; you will hence perceive the vast importance of such diseases, and the necessity of your devoting much attention to their study. The cases of fractures alone amount to fifteen, more than a third of the total number in my wards, and include some cases of great interest. Those of injuries of the head, with fracture of the skull, demand from you a more than ordinary share of attention. Among the cases next in importance to these, are two of compound fracture; one of both bones of the leg, and the other of the first or proximal bone of the thumb, complicated with sloughing of the surrounding tendons. These cases, though few in number, will enable you to comprehend the dangerous nature of compound fractures, and the constant attention they require from the surgeon. The rest of the cases of fracture, in my wards, are of the simple kind, and include some good specimens of those of the femur, tibia, fibula, patella, and clavicle, and in all these you could not fail to remark the extreme simplicity of the treatment, in comparison with the compound; the exemption also from pain which the patients experience, and, as we shall see by and by, the effectiveness of the treatment. As examples of diseases of the osseous system, we have also five cases of caries, some of which are well calculated to show you the intractable nature of this disease, and the consequent frequent recourse that must be had in its treatment, to excision or amputation. Of these cases of caries, in three the tarsal bones are variously affected but are progressing to a natural cure; in one the carpal bones and wrist joint are so seriously diseased as to require immediate amputation; and in one the pelvic bones are so extensively affected that in all probability the patient will not recover.

In the group of osseous and articular diseases, we have one case of necrosis of the tibia, in which exfoliation of the dead bone is progressing, and will ere long be discharged or removed; one interesting case of hypertrophy of the same bone; one of periostitis; one of dislocation of the ankle joint, of more than common interest, from the necessity of cutting the tendo achillis to effect reduction; and three of complex articular disease, two affecting the knee, and one the hip joint.

Of the fourteen cases not related to the osseous or articular systems, their nature is as varied nearly as their number; yet it will be quite unnecessary to refer to them in this introductory glance, except in the most general manner. Thus we have one case, and in the male, of bursitis patellæ of great size; one case of wound in the throat, from suicidal intentions, but the wound is not so deep as to cause alarm or danger; one case of severe bruise of abdomen and pelvis; one case of fistula in ano; one case of remarkable deformity, arising from the cicatrization of an extensive burn of the neck and chest; one of ossification of a part of the fascia lata of the thigh; one of a severe lacerated wound of the hand; two of simple ulcers situated on the leg; and five cases remaining after surgical operations, and transferred to me from my predecessor and most excellent friend, Dr. Lawrie; of these surgical operations, one was an excision of a tumour from the hip, and the other four were amputations—two at the middle of the thigh—one at the upper third of the leg—and one at the upper third of the humerus, all, with one exception, rapidly progressing to a cure. Out of these forty-two cases, I shall select for clinical lecture the cases of injuries of the head at present in the wards.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

I. *Observations on the Nature and the Treatment of Asiatic Cholera.* By Wm. Stevens, M.D., D.C.L., Oxon. Pp. 475. London: H. Baillière. 1853.

The propounder of any new theory, or the discoverer of any novel practical application, is certain to have his views ridiculed, and his statements denied. Such has always been the case, and such it will probably ever continue to be. This holds good, in an especial manner, as regards the theory and practice of medicine. True, there are discoveries made, such as that of the anæsthetic properties, first of ether, and then of chloroform, the reality of which are so speedily tested and proved, that they are at once accepted by the almost universal voice of the profession. But, to this hour, there are not wanting men, and those, too, of enlarged experience, and enlightened views, who condemn the use of these invaluable *preventives* of pain, by exaggerating the evils resulting, or likely to result, from their employment.

Twenty-two years have now elapsed since Dr. Stevens first declared that saline remedies were alone adequate to the cure of cholera, and, notwithstanding the facts which he adduced, and which have since been brought forward in support of his views, it is doubtful whether they have made any impression of a lasting character. The occurrence of a fresh outbreak of the disease has doubtless suggested to Dr. Stevens, a defence and additional evidence in favour of his plan of treatment, and the same circumstance renders the present a peculiarly fitting opportunity for us to investigate it.

Before doing so, it may be proper to inquire what information the occurrence of three epidemics of Asiatic cholera has given us of its nature, and the efficacy of the different plans of treatment which from time to time have been adopted. One melancholy and startling fact meets us at the outset of such an inquiry, and that is, that *one-half* of those attacked have died. Of the primary nature of the disease we know nothing; but experience has not failed to inform us as to its general laws. Thus we are aware that there are districts and cities favourably situated for the reception and dissemination of the choleraic poison; that in the cities so situated, there are peculiar localities, where it rages with great violence; and that in the city of Glasgow, at least, these localities are the very same where typhus fever, during the epidemics, is most common. Filth, destitution, intemperance, and fear, have been proved to be pre-disposing causes. We have learned also, that, in a large majority of cases, cholera is preceded by a slight diarrhœa, which is amenable to treatment; that if this is neglected the disease will supervene; and that, as a general rule, the medical art is powerless to arrest its progress. Further, we have seen, that should a patient emerge from the collapsed stage, after having been dozed, not *cured*, by sedative and narcotic remedies, the probability is that a secondary fever follows, which is remarkably fatal. Our experience as to the advantages of one remedy over another is so contradictory, that it becomes valueless. With untiring energy, and probably with more zeal than discretion, have remedies of the most opposite kinds been tried; and now, were the profession to be polled, we believe that three-fourths of its members would admit, that they regard a case of cholera in the stage of collapse as beyond the reach of remedial measures. Surely, in these facts, there is much cause for deep regret, and great incentives to exertion and inquiry. One duty seems to us imperative, that of calmly and dispassionately investigating any statements, which from time to time may be brought forward tending to throw light on this fatal disease. It would be an irksome and profitless task undoubtedly to waste time in examining the formulæ, which are so confidently recommended in the columns of the daily and medical press, by men of all grades, and from all parts of the country; but when a man of European reputation like Dr. Stevens, actuated by no mercenary views, and retired from the toils of his profession, feels himself called upon, by what he regards as his duty, after a long silence, to reiterate his former views and strengthen his former position, we conceive that he has a right to demand consideration.

In the year 1827, Dr. Stevens resided in the Island of St. Thomas, where yellow fever was very prevalent. The methods of treatment generally adopted were inadequate to check the ravages of this disease. On an examination of the blood taken from bodies recently dead, Dr. Stevens discovered that it was deficient in its saline ingredients, and looking upon this deficiency as the immediate cause of death, he argued that by supplying it he might succeed in arresting the disease. "He was happy enough to effect this most successfully by administering a mixture of the neutral salts, viz., muriate of soda, carbonate of soda, and nitrate of potash, in solution. He found that when these were taken into the stomach largely, a great portion entered directly unchanged, into the circulation through the *venæ cavæ;* the effect on the blood was instantaneous; it was reddened and its vital power restored. A part of the salts remained in the circulation, while the excess was removed by the secreting organs, carrying off with it the poison," p. 27. In 1832, Dr. Stevens published his views on the nature of the blood, showing that its colouring matter is originally black, and that it is soluble in acids and alkalies forming dark-coloured solutions, which, however, when rendered neutral, become of a bright scarlet colour. These views were confirmed by Mr. Brande and Dr. Turner, and have since been frequently corroborated. He found, also, that "when the neutral salts were mixed with the dark and dissolved blood, that had been taken from the hearts of those who had died from yellow fever, even this black fluid was immediately changed to a colour that was highly arterial," p. 28. The blood taken from cholera patients was analogous to that drawn from those labouring under yellow fever, both, in short, being deficient in their saline ingredients. In support of the correctness of this view, we may cite the evidence of Dr. W. B. O'Shaughnessy, who, in a letter to the editor of the *Medical Gazette*, in 1831, describing the results of his experiments on the blood of cholera patients, says, "it has lost a large proportion of its neutral saline ingredients. Of the free alkali contained in healthy serum, not a particle is present in some cholera cases, and barely a trace in others. All the salts deficient in the blood, especially the alkali or carbonate of soda, are present in large quantities in the peculiar white ejected matters." The efficacy of the mode of treatment pursued by Dr. Stevens, in accordance with these views, in yellow fever may be gathered from the fact that in the island of Trinidad alone, from 1828 to 1832, out of upwards of *one thousand* cases, treated on this plan, there were only *eleven* deaths. "The similarity observed in the morbid blood in the last stage of cholera and yellow fever, induced Dr. Stevens to believe that the nonpurgative saline medicines were the most likely to be useful in cholera; for they not only redden the blood, but by increasing its fluidity and adding to the stimulating power of the vital current, they render it better fitted to serve the important functions which it is intended to perform in the system. Hence, also, he concluded that the first effort towards a cure, should be directed to assist nature in throwing off the poison from the blood *per vias naturales*, and at the same time, supply the necessary saline stimuli on which the action of the heart and its vessels depends. It is, therefore, not only necessary to expel the poison, but the normal state of the blood must be restored, if the treatment is to succeed in saving the patient from this fell disease," p. 36.

We quote from the works of Drs. Stevens and Bushnan,* the mode of practice adopted by the former in the prison of Coldbath Fields, in 1832. To patients labouring merely under the premonitory symptoms of diarrhœa, a seidlitz powder was administered. If there was sinking without purging, the more active purgative of sulphate of magnesia in combination with the seidlitz powder was given. The bowels being moved, then beef tea well seasoned with salt was allowed, and if there was irritability of the stomach, a sinapism was applied to the epigastrium, while thirst was allayed by seltzer, soda, or pure water, *ad libitum.* These simple measures generally succeeded in arresting the further progress of the disease. In the second sage, characterized by cramps, coldness, or sinking of the pulse, the following powder dissolved in half a tumbler of water, was administered every half-hour or so, according to the severity of the symptoms:—muriate of soda, a scruple, carbonate of soda, half a drachm, chlorate of potass seven grains. Severe irritation of the stomach was counteracted by the application of a large sinapism and heat, or burning at the stomach, by the addition of an increased quantity of carbonate of soda to the saline powder. "In cases where life seemed rapidly ebbing, the collapse stage having been reached, a strong solution of the same salts, at a temperature of one hundred degrees, was thrown into the bowels. In extreme cases of collapse, this latter method succeeded far better than the injection of the vital electric salts† into the veins. The saline mixture was administered half-hourly; and, in severe cases, the muriate of soda was increased to a drachm, or even more, as circumstances seemed to require. There the stomach was extremely irritable, it was found that the carbonate of soda given by itself, or the tartrate of soda, in a state of effervescence, was the most effective remedy that could be employed for allaying the irritation, so as to enable the stomach to retain the stronger salts. The first object was to remove the excess of acidity in the stomach as one cause of the intense burning and local irritation, amounting even to inflammation, or the *gastro-enterite* of Broussais. This species, however, of the enterite cannot be cured either by gum water, taken internally, or by leeches applied to the pit of the stomach. The irritation is produced by a local cause, and can only be removed by local means. At this period of the disease, the alkaline carbonates are of infinite value; for example, by exhibiting the carbonate of soda, the fixed acids of the stomach are immediately neutralized. A large quantity of carbonic acid is evolved by the mouth, and the irritation of the stomach disappears almost as fast as if it had been removed by a charm. The fixed acids are immediately neutralized by the alkali of the carbonate; the muriate of soda, and the other natural salts of the blood are instantly formed in the stomach itself, and enter the circulation; that is, they mix with and become a part of the circulating blood, changing its properties and remedying its morbid condition. * * * * * The enema, exhibited and found so valuable, was composed of a large tablespoonful of muriate of soda, dissolved in warm water, sometimes with the addition of sugar or starch, and administered every two or three hours, at as high a temperature as the patient could well bear. Sinapisms were also applied as early as possible to the region of the stomach, betwixt the shoulders, &c.; in the cold stage, frictions were frequently used with warm towels; and a pure air for the patient to breathe, was considered a matter of the greatest importance to the person whose blood has been contaminated with poisoned air," p. 38.

---

* Cholera and its Cures. London: W. S. Orr. 1850.

† Dr. Stevens has a theory of his own, in regard to the special mode of action of the salts, but into this it is not necessary for our purpose to enter.

Such is the course recommended by Dr. Stevens, and the one pursued by him in Coldbath-Fields Prison, during the epidemic of 1832.

In almost no case was opium administered, Dr. Stevens considering it very baneful, especially when given in the early stage.

The results have now to be scrutinized. Epidemic cholera prevailed in the prison from 5th April to 27th December, 1832, a short lull occurring between 11th May and 3d June, so that there were two attacks, the first from April 5th to May 11th, the second from June 3d to Dec. 27th. The few cases which first occurred were naturally enough, considering that the disease was new in England, treated in the way laid down in the instructions of the Board of Health. But four deaths having occurred, Mr. Wakefield, the surgeon, seems to have been dissatisfied, and accordingly Dr. Stevens was invited to set in action the saline plan of treatment, and this method was adopted from the 10th of April to 11th May, at first by Dr. Stevens and Mr. Wakefield, and latterly by Mr. Wakefield alone. "In the first irruption, dating from April 5th to May 11th, there had been a total number of 165 cases of cholera, 30 of which were cases of collapse. It appears from the books of the prison that nine deaths had occurred in this number of cases. In a letter, dated April 25th, which Mr. Wakefield wrote to the Editor of the *Medical Gazette*, he said, alluding to the cases which had then come under his care, "*Four* of the first cases were treated in the *common way, and every one of them died.*" This reduces the nine deaths, so far as the saline treatment is concerned, to five. But we have also Mr. Wakefield's admission of another very important fact, viz., that as the number admitted into the Infirmary increased, "it became necessary to dismiss those who appeared least ill;" the consequence of which was, that a relapse set in in two cases, "and though every attempt was made to save them, yet they both died after a very short illness, with the symptoms of cholera in its most virulent form." Deducting, then, these six cases from the gross number of nine deaths in the first irruption, we have only three deaths left. "The records of the prison also testify to the truth of the above facts, independently of Mr. Wakefield's published statements."* It appears, however, that even out of these three, only one can be said to have died of cholera, the other two having sunk respectively under fits and typhoid symptoms. The result, then, of this first trial of the saline practice in England was triumphant. "165 cases of cholera, with one death in 159 cases, under the saline treatment, or one death and 158 recoveries."

According to the work of Dr. Stevens, this great success, obtained by measures totally different from those recommended by the Board of Health, excited the opposition of its members, and no efforts were spared to cast doubt upon the truthfulness of his statements, and obloquy on himself.

The second outbreak of cholera in Coldbath-Fields Prison, commencing on June 3d, and ending on Dec. 27th, furnished a larger number of cases than the first, no fewer than 339 being recorded in the prison books, of which 201 were in the stage of collapse, and of these in 34 only was there a fatal result. Dr. Stevens in his work proves that even this rate of mortality does not present a fair view of the results of the saline practice, as Mr. Wakefield, during the temporary absence of the governor, had abandoned it. He holds that out of 308 cases in which it had a fair trial, only three proved fatal. It is unnecessary to inquire into the facts he brings forward in support of this statement, as even granting the mortality to have been at the rate of 34 in 339, it falls very far short of the average number of deaths, under any other mode of treatment. The publication of the results of Dr. Stevens' treatment excited much astonishment, and much hostility towards him, and doubts were openly expressed as to the cases in Coldbath-Fields Prison having been real cases of cholera. The work before us enters very minutely into the whole particulars of the dispute which ensued, but, while fully sympathizing with the unfair treatment, and uncandid criticisms to which Dr. Stevens was subjected, and of which he most indignantly complains, we do not see that any good will result from dwelling now upon the matter. The saline treatment, while it met with persecution, found also advocates. Dr. Kendrick of Warrington published* the results of 108 cases. "Seventy-eight of these were treated in different ways, and all died. Seven were treated by the salines and bleeding; all recovered. Twenty-three were treated with the salines alone; twenty-one recovered, two died." Mr. Bossey of the Norwich convict ship treated 56 cases by bleeding and salines, with 45 cures; 65 with salines alone, with 56 recoveries. Dr. Marsden of the Greville Street Hospital, had only 7 deaths out of 81 cases. Many other practitioners have borne testimony to the success of the saline treatment, among whom we may instance Mr. Leckie of Bonhill.

---

* Bushnan, p. 155.

The result of our perusal of Dr. Stevens' book is, that in the present state of our knowledge, it is an incumbent duty upon those who have the opportunities of giving his mode of treatment a fair trial, to put it to the test. It has been announced on high authority "that the medical experience of Europe is, that for the collapse of cholera there is no cure," and this opinion has been over and over again reiterated by men of experience in the profession. Holding these views, they violate no conscientious opinions, and are guilty of nothing but a performance of duty, in *trying* what is emphatically declared to be a successful remedy. The work of Dr. Stevens is too much taken up with matters of controversy, in which the practitioner will take little interest, to be extensively read; but it contains facts and statements well worthy the consideration of the profession, and proves, as far as documentary evidence can succeed in proving, that his practice has been eminently successful.

II. *The Pathology and Treatment of Pulmonary Tuberculosis.* By JOHN HUGHES BENNETT, M.D., F.R.S.E. Edinburgh: Sutherland and Knox. 1853. Pp. 142.

TO Mr. Ancell of London, the profession has recently been indebted for a work of profound research and accurate deduction, on the subject of tuberculosis. We confess it is with some surprise at the temerity of the author that we have examined the latest production of Dr Bennett on one, and the most important, branch of the same subject. The necessity for any such book, apart from its merits, is by no means easily seen, and to load medical literature with volume upon volume, irrespective altogether of these volumes being demanded, is damaging alike to the author and to the profession of which he is a member. We have no desire of instituting a comparison between two works so dissimilar in plan, and differing so much in effectiveness of execution as those of Mr. Ancell and Dr. Bennett. Our present object is rather to protest against the conduct of which Dr. Bennett, through the medium of his booksellers, has been guilty. In the public press his work has been repeatedly advertised, with the addition of the gratuitous information that it is a "new work on consumption." Such a proceeding cannot be defended. Its aim is too obvious, not merely an attempt to sell a few copies to non-professional readers, although this would be bad enough; but it is a blazoning abroad of the important fact, that Dr. John Hughes Bennett, of Edinburgh, has made a peculiar study of consumption, and that its victims, condemned perhaps to banishment by the ignorance of the west, have but to fly for succour, relief, and *cure* to him. Nor is this all, as the reader of the *Edinburgh Monthly Journal* will very soon discover, nay, as Dr. Bennett, in his preface, has even the candour to admit, this book is not a *new* book, and has no pretensions to be so called, containing statements and opinions which have again and again been forced on the attention of the profession by the author. We cannot, therefore, be expected to analyze its contents. It may be sufficient to state, that after a very meagre account of the pathology of pulmonary tuberculosis, the greater bulk of the work is devoted to its treatment, and the good effects of cod liver oil and comfortable apartments in *Edinburgh* in arresting its progress. This division of the subject is copiously illustrated by details of cases and cures. The cases and illustrations certainly amused as well as interested us, for if our memory is not very defective we remember hearing Dr. Bennett give a lecture on the pathology of phthisis, while he was pathologist to the Edinburgh Infirmary, during which, the lungs, which he has figured, were triumphantly taken out of a bottle, where they had been steeping in spirits, and shown off as cured cavities. The author does not seem to have got any addition to his jar. We remember also being much impressed with the account of case 19, the *rencontre* on the South Bridge and in the common stair giving it quite a melo-dramatic character. The case is evidently too good to lose, and so we have it served up in the book after it has answered its purpose in the class and the *Journal*.

---

* Medical Gazette, vol. x., p. 731.

The fourth and last chapter is devoted to "observations on the use of local applications to the pharyngeal and laryngeal diseases, which are frequently mistaken for, or associated with, pulmonary tuberculosis," but adds nothing to the information which the profession already possesses on this topic.

We regret it is out of our power to congratulate Dr. Bennett on his work; but if he means to maintain, much more increase, his reputation, it will not do to foist upon the profession a *rechauffée* of stale observations, and cases which, while suitable for the pages of a Journal at the time of their appearance, are not of sufficient value to demand collection and republication, in a neatly bound octavo. In his next edition we would recommend the author to assume, as the motto of the book, that singularly apposite remark of the Christmas Merry Andrew, as he night after night tumbles on to the stage to introduce his *novelties*, "Here we are again!"

III. *The Microscope in its special applications to Vegetable Anatomy and Physiology.* By Dr. HERMAN SCHACHT, translated by Frederick Currey, Esq. Pp. 131. London: Samuel Highley. 1853.

THIS work forms one of a series of very useful volumes, published by Mr. Highley, under the title of the "Library of Science and Art." It takes up a department of science which has hitherto, in this country, been treated of only as an introduction to more general works on botany and vegetable physiology. Though the author confines his observation to the method of investigating vegetable structure, there are many parts of the treatise equally applicable to the study of animal tissues; indeed, the greater part might be very profitably read by all who would put the microscope to its proper use, and keep it in its proper place, as a means of discovering new facts, or corroborating former observations. This is especially true of the first chapters, in which a detailed account is given of the various apparatus necessary for the philosophical conduct of microscopical observation, and some general rules for the use of the instrument and arrangement of the objects. After describing the best kind of light for microscopical purposes, the author introduces some hints on the manner of clearing the glasses and slides, and as the most scrupulous attention to this point is necessary, for avoiding the many sources of fallacy to which the use of this instrument is liable, we may quote a few lines in illustration:—

> "When the microscope is in daily use, it is a good plan to keep it under a high bell glass, or an ornament shade. When the day's work is over, I particularly recommend every beginner, before he puts his microscope away, to examine his object-glasses carefully with a magnifying-glass, for it often happens, even to a practised observer, to dip his object-glass in the fluid upon the slide, or to dirty it in some other way; if the glass be only wetted with water, it is of no importance; the consequences, however, may be more serious if the water is permitted to dry upon the lens, especially when the water is impregnated with muriate of lime, inasmuch as, after the evaporation of the water, the lime may stick fast to the glass, and give rise to little scratches in the process of cleaning. When the object-glass has become dusty, or dimmed by atmospheric deposits, it may be cleaned with dry elder pith, care being taken to cut off with a clean razor the surface of the pith which has once been used, and thus to obtain a new surface for the further process; the particles of the elder pith are afterwards removed with a clean camel's-hair

brush. If the glass has become wet, it is first carefully dried with a clean linen cloth which has been previously washed—cambric or muslin is the best; and afterwards the elder pith is used. If the glass is soiled by any acid or any other biting fluid, it should be rinsed frequently with distilled water passed through a syringe, and then dried and cleaned in the manner above mentioned. The eye-glasses and the mirror are best cleaned with fine cambric, and also with elder pith. Alcohol and ether should never be used for cleaning the object-glasses, or at least only with great care, since these fluids easily penetrate between the fastening of the lenses, and may reach the cement which unites the crown glass to the flint glass. A lens which has been spoilt in this manner can only be rendered fit for use by a practised optician, who can take it to pieces and put it together again. The more carefully a microscope is preserved from injury, and the cleaner it is kept, the better service it will render, and the longer it will retain its original value."

The author next directs attention to the extraneous objects which may interfere with, and modify the appearance of, the object under consideration, as air bubbles, fibres of cloth used in cleaning the glasses, particles of dust or cork, epithelial cells from the mouth, streaks caused by the knife, &c. The manner of making thin sections is then described, and the best method of transferring them to the glasses, and removing any air which has become entangled among them.

The instructions for the study of vegetable physiology are contained in two chapters, one bearing reference to the appearance, form, and arrangements of the cells of plants, and the methods of procuring and examining them; the other including the examination of the perfect plant, the stem, the root, the leaves, the flower, and fruit, the motion of the juices of the cell, the development of plants, flowers, and the embryo, and the development of the cell. These are all treated in detail, and the method of studying each described with great precision. We have not space to do more than mention them in the order in which the author takes them up. There is, also, a chapter containing some practical observations on drawing, as applied to microscopical study, and some general directions on the use of the camera lucida. The treatise concludes with a section on the preservation and mounting of microscopical objects connected with vegetable physiology.

IV. *On Diseases of the Rectum.* By JAMES SYME, F.R.S.E. Third Edition. Edinburgh: Sutherland and Knox, 1853. Pp. 133.

VENI, vidi, vici, ought to be the motto of the author of this work. There are certain animals of the feathered tribe whose plumage we admire, whose gait we stare at, but whose vocal organs are most repulsive. So it is with this production of our author. The volume, the third edition of which now lies before us, is well got up, nicely bound, and in every respect creditable to the Edinburgh press, but the unsparing abuse which the author heaps upon all who may chance to differ from him either in theory or practice, presents to the mind of the philanthropist a specimen of inordinate self-esteem. The preface consists of a *resumé* of all that Mr. Syme conceives he has accomplished in the department of diseases of the rectum; and, though he notices in the body of the work, what had been done by others before him, here he appears as the sole "rescuer of diseases of the rectum from the hands of rapacious quacks, by establishing their treatment on sound principles of surgical practice." The reason the author gives for editing a third edition is amusing; for while he believes that the numerous treatises and compendiums of surgery lately published, have gathered all that is good, bad, and indifferent of surgical principles, and contain all the practical information embodied in his own work, still he thinks it proper to afford his friends an opportunity of "obtaining the information from its *original* source, instead of picking it up at second hand."

The work itself consists of about 120 pages of wide-printed letterpress, which could easily be compressed into three sheets of this journal. The first 57 pages are occupied with fistula in ano, a most important disease, one which has occupied the attention of the most celebrated surgeons, a disease most formidable as formerly treated, but in the present day, not to be ranked in the same category; in consequence of the simplicity of the operation for its cure, which was originated by Pott, and has been practised ever since his time. The origin and progress of the disease are clearly and accurately described in the work before us, and had our author followed the same course in treating of its cause and cure, little would have been left for criticism. Instead of this, he quotes two pages from Sir Ben. Brodie's work, in which the learned Baronet, after describing the progress of ulceration of the mucous coat of the rectum, and the perforation of this part of the gut, gives it as his opinion that this, in the majority of cases, is the cause of fistula. The commentary on this very important opinion we quote:—

> "Without inquiring into the theoretical grounds upon which this explanation is founded, I would remark that the point in question is a matter of fact, which readily admits of being ascertained by actual examination. Having made this examination times innumerable, before as well as after evacuation of the abscess, I do not hesitate to affirm, that when a *fistula in ano* is formed, *the mucous membrane always remains entire in the first instance, and is never perforated until after suppuration has taken place.*"

After reading this, one need not wonder that the author finds himself in bad odour with his professional brethren, both in Edinburgh and elsewhere. That surgeons may and will differ on points of theory and practice every one allows, but there is a way of stating an opinion without giving offence. No doubt Mr. Syme is correct in stating that in the majority of cases the cause of fistula is abscess; but we have seen cases in which, in consequence of ulceration of the mucous membrane of the rectum, perforation of the wall of the gut had taken place, and blind internal fistula was the consequence. Besides, Mr. Syme allows that foreign substances, as fish bones, are sometimes the cause of fistula, by being arrested within the sphincter ani, ulcerating through the coats of the rectum, and giving rise to perineal abscess.

Again, in the following passage, in attempting to trace the connexion between phthisis and fistula, the author falls into the very train of theoretical reasoning for which he has attacked Sir B. Brodie:—

> "As the great intestine is generally found ulcerated in the bodies of those who have died from consumption, it seems probable that the morbid state of this part, and not that of the lungs, is the exciting cause of fistula, but the disease certainly does occur in cases of pectoral affection, which exhibit no symptom of intestinal disorder."

In proceeding to the treatment, our author, with his usual self-complacency, describes the blunders and malpractice of his professional brethren, introducing by name Pott, Copeland, Sir A. Cooper, and Mr. Liston, and winds up by leaving his readers to suppose that nobody knows anything about the matter but himself. In examining his pretensions to originality in the cure of this malady, we shall shortly state what has been the practice since Mr. Pott introduced and described his operation. A probe-pointed bistoury is introduced up the sinus, to the spot where it communicates with the gut, the finger is then slid up the rectum till it reaches the point of the instrument, which is now drawn downwards, dividing the walls of the fistula and the sphincter. As to the situation of the internal opening, that must vary in different cases, and though the author adopts the opinion of M. Ribês, and we admit its correctness in most cases, we maintain that there is no invariable rule as to the point of perforation. In what respect, then, we would ask, does Mr. Syme's operation differ from that of Mr. Pott or Sir B. Brodie? In no one point, although our author struggles hard for originality.

We have long held that this operation may be still more simplified, and acting on this conviction have frequently carried out our views. The following we conceive to be the simplest mode of operating. The patient is placed on his knees on a chair and leans forward, resting his elbows on the back, an assistant separating the nates as much as possible. A thin silver grooved director is introduced into the external orifice of the fistula, and pushed upwards to the internal opening in the gut. The operator introduces the fore finger into the rectum, as far as the point of the director, which he easily bends and brings down outside the verge of the anus. By this simple procedure, the whole wall of the fistula requiring division is brought into view on the grooved director, and the operation is completed by dividing it from below upwards with a common bistoury as in an ordinary sinus. By this method a dark, uncertain and unseen operation, is converted into one visible and easily executed. The practice above recommended has been extensively adopted in this city both in hospital and private.

The chapters on fistula are the most important part of the book, and the remainder is so stale and commonplace as scarcely to need notice. The chapter on hæmorrhoids is in many respects amusing, as exhibiting the author's peculiar manner and matter. At page 79 is the following :—

> "A gentleman from Glasgow consulted me for an ordinary growth of internal hæmorrhoids, and was advised to have them removed by ligature,—but not wishing to displease his ordinary attendant, submitted to excision, and died within a fortnight."

We would beg to remind Mr. Syme of the case of a gentleman connected with Glasgow, who within the last year fell a victim to internal hæmorrhoids operated upon *by him*. This gentleman died, and probably this is the very case alluded to. Again,—

> "The officer commanding one of her Majesty's regiments recently returned to the south of England, after long service in India, came to Edinburgh in quest of relief from very large hæmorrhoidal tumours, which were protruded by the slightest exertion, and, indeed, could hardly be restrained at all within the sphincter. He said that before going abroad, he had some operation performed in Dublin, but obtained no relief; and latterly could not sit on horseback without placing his handkerchief rolled into a ball under him on the saddle, having upon one occasion in this wretched plight led his regiment into action—a greater effort of heroic resolution than can well be imagined by any one who is not familiar with the depressing influence of what is usually called prolapsus. I saw this gentleman with Dr. Alison, and at first felt doubtful how far any operative interference would be warrantable, in consideration of the patient's age and derangement of health consequent upon long residence in a tropical climate, but confiding in the safety of ligatures ventured to employ them with the happiest result. Encouraged by this success, the officer next in command, who was suffering from the disease, though to a much smaller extent, went to London, submitted to excision, and died in a few days."

We think we hear the author, in his own peculiar fashion, exclaim, "Oh had he come to me he might have been living still!"

> "Very lately, a lady had the trouble of travelling six hundred miles to come here that I might relieve her from a disorder consequent upon the use of nitric acid for the removal of an internal hæmorrhoid; and not long ago we heard of a valuable life being lost in one of the capitals of her Majesty's dominions, from the employment of the actual cautery for this purpose." ! !

Lastly, at page 110 occurs the most curious specimen of the whole, from which it appears that two of the most respectable surgeons in Edinburgh had spent *three hundred* hours in attempting to cure a stricture of the rectum which did not exist, the obstruction which they supposed to be a stricture, turning out to be the promontory of the sacrum. The case seems introduced as a sort of set-off to the author's rapid and unerring diagnosis.

When one reads in the newspapers wonderful cures performed by Holloway, Morrison, Greer, and others of that tribe, after trials by the most skilled in the profession, no surprise is felt, for it is a part of their *trade*, and the more glaring the absurdity and the more stupid the regular practitioner can be made to appear, so much the more profitable to the quack is the so-called cure. But for a well informed and well educated professor of surgery, in such a learned body as the University of Edinburgh, to descend to such shifts, is in our opinion so unprofessional, that it well explains all that has taken place in the history of the author, from his early quarrels with Liston and others, down to those of more recent date.

MEDICAL INTELLIGENCE.

1. *Quarterly Report of the State of Disease in the Glasgow Royal Infirmary.*—In all the departments of the Hospital there has been a decided increase in the number of patients admitted during the fourth quarter. The total number of patients admitted, during the last quarter, was 1090, of which 632 were admitted to the medical and surgical wards, and 458 were admitted to the fever wards; as compared with the three preceding quarters, the number of admissions to the medical and surgical wards, has been nearly equal to the first quarter, and considerably more than the second and third. The numbers having been, first quarter, 634; second quarter, 580; third quarter, 516, and fourth quarter, 632. In the fever wards, the admissions have been less than in the first quarter, and greater than in the two succeeding, there having been respectively in the first quarter, 693; second quarter, 409; third quarter, 396; and fourth quarter, 458. This statement corroborates the assertion made in last report, in regard to the greater prevalence during the winter and spring months than during the summer and autumn of disease of all kinds, more especially cases purely medical and fever.

The opinion hazarded in last report, that fever was likely to increase in intensity to the same extent as was experienced last year at this season, has happily been found not to be in accordance with fact. Though there has been a slight increase during this quarter, the number of cases has not been more than one-half that of the same period last year.

It was observed, that at the period of the last visitation of cholera, at this season of the year, in 1848, the number of fever cases was very low; and now that cholera has again returned, it may be found that the co-existence of the two diseases to any great extent, may be incompatible. During the first quarter the cases were, with few exceptions, Typhus, and the only complications were pulmonary. Throughout the rest of the year, more especially during the last quarter, the forms of fever have been more varied, some of the cases have presented very slight febrile symptoms; there has been a considerable proportion of mere febricular, of gastro-hepatic, and typhoid cases, and a greater prevalence of abdominal symptoms. In one case, which proved fatal, there was great hæmorrhage from the bowels, both before and after admission. The number of deaths in the fever hospital was 59 in 458 cases admitted, giving a per cent. of rather more than 12, a rate of mortality lower than the first and third quarters by 2 per cent., and than the second by 7, when the per cent. was as high as 19.

That the sanatory condition of the hospital has been good, is proved by the comparative low rate of mortality in all parts of the house. Appearances of hospital gangrene have occurred, but were speedily checked.

In the medical and surgical departments the number of deaths has been 48, while the admissions were 632, giving an average of about 7 per cent., a rate of mortality considerably below what has obtained during the rest of the year.

In the small-pox wards, the number of patients treated amounted to 22. In these, there were four deaths; one of these cases was complicated with diabetes. There have been as many as 10 cases in the house at one time, but at present there is only one case. Nine-tenths have been natives of the Highlands. Five cases contracted the disease in the medical, surgical, and fever wards.

In the medical wards, the most numerous cases have been those of a syphilitic and rheumatic and bronchitic character. There has been a limited number of cases of phthisis. There have been eight cases of albuminuria. Three cases of diabetes mellites presented themselves in the course of as many weeks; one, a native of North Uist, contracted small-pox while in the house, and died; another, a married female, was affected with the disease in the 7th month of lactation, and continuing to suckle her child for three months after the disease manifested itself, during that period the child became similarly affected with the mother, but, after being weaned, it completely recovered, and subsequently died of measles. This case proves that the secretions of a person affected with diabetes, introduced into the system by the stomach, produce similar symptoms in another, without ingrafting the disease on the constitution. Three cases of children, belonging to the same family, affected with general anasarca, the sequela of scarlatina, were brought into the hospital at the same time. The youngest was moribund on admission and died, while the other two speedily recovered. An interesting case of elephantiasis of the left lower extremity, under the care of Dr. Easton, has been two months under treatment, and some diminution in the bulk of the hypertrophied limb has been produced, as evidenced by the periodical measurements.

In the surgical wards, it may be mentioned that the case of excision of the ankle joint, by Dr. A. Buchanan, alluded to in last report, was dismissed nearly well a short time ago. Another case of a girl, who was admitted in July last, with compound fracture of the skull, with a cup-like depression, 2 inches in diameter, was recently dismissed quite recovered, no untoward symptom having occurred, and no operative interference having been had recourse to. Of two cases of injury of the head, under Dr. Lawrie, one of them compound fracture of the skull, from the kick of a horse, which required very active treatment, made an excellent recovery, without any operative interference; and another, which had all the symptoms of fracture of the base of the skull, also recovered. Several other cases of injury of this kind, have proved speedily fatal; one of extensive laceration of the scalp and fracture of the cranium, under Dr. Fleming, is remarkable for the great length of time he has survived, and the mildness of the head symptoms. It is not expected, however, that he will recover.

Of the operations which have been performed, may be mentioned one of lithotomy, by Dr. Lawrie, and one of urethrotomy, by Dr. A. Buchanan, both for the extraction of calculi, and both quite successful. Of the amputations performed, secondary cases from injury have, as usual, proved most fatal; two amputations of this kind, one in the thigh, and one in the leg, proved fatal, with gangrene of the limb.

Three amputations in the middle of the thigh, from diseases of the knee joint, have done well; one in a child of twenty months; one in the upper third of the thigh, from periostitic abscesses and necrosed bone, recovered. Another in the upper third of the thigh, osteo-sarcomatous tumour of the end of the femur, has also recovered; one in the lower third of the thigh, from strumous disease of knee joint, proved fatal. Three amputations, one secondary, and one primary, of the upper third of the leg, from injury; and one from disease of the ankle, recovered.

Two cases of Syme's operation proved unsuccessful, the flaps having sloughed. Amputation in the upper third of leg was performed, and death ensued. Two of Chopart's operation, one from disease of the metatarsal bones, and one from gangrene after typhus, are doing well; in the latter case, the removal of a portion of the other foot will also be necessary. A considerable number of operations on the upper extremity, and other parts of the body, have been performed, which do not call for notice. Some capital operations having been only recently performed—nothing can be said of them at present.

Two cases of traumatic tetanus have occurred, one from smash of the hand, and one very acute, from an extensive burn. Both proved fatal.

2. *Glasgow Medico-Chirurgical Society.*—The eighth meeting of the Session was held on Tuesday, the 4th October. Mr. Lyon in the chair. Dr. Morton read a paper, entitled, "Case of Fracture of the Neck of the Femur, with Remarks." This communication will be found in the present number. The paper elicited considerable discussion, some of the members maintaining that the evidence in favour of fracture was very dubious, from the obscurity of the symptoms and the very short time required for the alleged cure.

On the motion of Dr. A. D. Anderson, a *pro re nata* meeting of the Society was held on Tuesday, the 11th, and adjourned to Tuesday, the 18th, to consider the steps which ought to be adopted, with regard to the anticipated approach of cholera. The first meeting was occupied in discussing the long debated question of contagion in regard to this disease, and the conclusion was in no way different from what it has always been, there being nothing like unanimity of opinion. At the second meeting, the propriety of treating the sick at home, or in hospitals, was considered. We have not space to notice the individual opinions advanced, but the conclusions generally agreed on were to the effect: 1. That when the circumstances of the patient admitted of it, he should not be removed from the house in which he is taken ill; 2. That when there is no convenience for the application of warmth, the regular administration of the remedies required, and regular supplies of drink and attendance, the affected person should be removed without delay to an hospital; 3. That the hospital should not be at a great distance from the house of the patient; 4. That, therefore, besides a general hospital in a central situation, there should be erected temporary local hospitals with a small staff in attendance, situated near those densly crowded districts, which usually suffer most severely on the outbreak of epidemic disease.

3. *Faculty of Physicians and Surgeons, Glasgow.*—A correspondence having lately taken place between the Faculty of Physicians and Surgeons of Glasgow and the Poor-Law Commissioners in England regarding the eligibility of Fellows and Licentiates of Faculty to obtain Medical Appointments under the Poor-Law Act, the following is an extract from the reply of the Secretary of the Board:—"The Board are of opinion that the Act of 1850, relating to the Faculty of Physicians and Surgeons of Glasgow, (13th Vict. cap. 20,) has the effect of placing a Fellow of that Faculty on the same footing as a Member of the Royal College of Surgeons of London, or Edinburgh, or Dublin, in respect of his capacity to be appointed a Medical Officer under the Poor-Law Commissioner's General Consolidated Order of 24th July, 1847;" and, further, "the Board entertain this opinion notwithstanding that the Faculty in question is not specifically designated in name as a Royal College." Inquiry having thereafter been made whether the Board, in expressing the above opinion, intended to include persons holding Licenses or Diplomas in Surgery from the Faculty, as well as Fellows or Members of the Faculty itself, it was stated by the Secretary "that they certainly intended that their communication above referred to should apply to Licentiates of the Faculty as well as to Fellows, though the name of the former was accidentally omitted."

We are glad to state that Dr. Smith, on behalf of the Army Medical Board, has placed at the disposal of the Faculty, one commission per annum, to be given to a Licentiate, who makes an honourable appearance at his examination, subject to some conditions as to a more extended course of study than what is usually required for the ordinary license of this Faculty, or of the Colleges of Surgeons.

4. *Cholera in Glasgow.*—The following Report of cases admitted to the Cholera Hospital, City Parish, Glasgow, till date Dec. 27, 1853, is the only authentic one we could obtain:—

Adults.		Children.		Total.	Cured.		Died.		Remaining under Treatment.				Total.
M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	
10	20	3	1	34	1	4	10	9	1	8	1	—	10

It is necessary to state, that, with one or two exceptions, the whole of the patients who died were brought to the hospital in a state of collapse. Three of those under treatment are now convalescent.

A number of cases have also occurred in the Barony Parish since the beginning of the present outbreak, but we have not been able to get an authentic medical report of them.

BOOKS RECEIVED.

The Pathology and Treatment of Pulmonary Tuberculosis. By John Hughes Bennett, M.D., F.R.S.E. Edinburgh: Sutherland and Knox. 1853.

The Microscope, in its Special Application to Vegetable Anatomy and Physiology. By Dr. Hermann Schacht, translated by Frederick Currey, Esq., M.A. Highley, London. 1853.

Sketches of Brazil, including New Views on Tropical and European Fever. By Robert Dundas, M.D. Churchill, London. 1852.

On Diseases of the Rectum. By James Syme, F.R.S.E. Third edition. Edinburgh: Sutherland and Knox. 1853.

Some Remarks on the Medical Evidence, given at the Trial of W. B. Kirwan, for the murder of his wife. By John J. Field, M.D., with a Commentary thereon, By Frederic C. Skey, F.R.S. London: Highley. 1853.

Observations on the Nature and the Treatment of Asiatic Cholera. By Wm. Stevens, M.D., D.C.L. London: H. Baillière. 1853.

A Treatise on Diseases of the Heart and the Aorta. By William Stokes, M.D., Regius Professor of Physic in the University of Dublin. Dublin: Hodges and Smith. 1854.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. Rankin, M.D., and E. B. Radcliffe, M.D. Jan. to June. 1853. (In Exchange.)

The Southern Journal of the Medical and Physical Sciences. Sept. and Nov., 1853. (In Exchange.)

The Edinburgh Monthly Journal of Medical Science. Oct., Nov., and Dec. (In Exchange.)

The Journal of Psychological Medicine. October. (In Exchange.)

The Medical Examiner and Record of Medical Science. Philadelphia. July, Aug., and Sept. (In Exchange.)

The Boston Medical and Surgical Journal. Monthly Series, Sept. and Oct. (In Exchange.)

The Dublin Journal of Medical Science. October. (In Exchange.)

The American Journal of the Medical Sciences. October. (In Exchange.)

The Association Medical Journal. Weekly. (In Exchange.)

The Dublin Medical Press. Weekly. (In Exchange.)

The Medical Circular. Weekly. (In Exchange.)

4113

COUNTWAY LIBRARY
HC 1E5C I

U.HO